



BROADWAY BOULEVARD HISTORIC TREATMENT PLAN TECHNICAL MEMORANDUM

Prepared by
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Charlottesville, VA

Prepared for
City of Galveston, Texas
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INTRODUCTION

This technical memorandum provides treatment guidance to support the replacement of historic trees along the Broadway Boulevard esplanade in Galveston, Texas. The development of the historic treatment technical memorandum is one task within the overall Cultural Landscape Rehabilitation and Maintenance Plan, undertaken by AECOM Technical Services, Inc. and its subconsultants between September and December 2011 for the City of Galveston.

The City of Galveston has been an active steward of its historic resources, and the protection of Broadway Boulevard's historic character has been an on-going effort, including beautification projects throughout the 20th century and into the early 2000s. However, Broadway Boulevard—and indeed most of Galveston—suffered a tremendous loss of historic trees in 2008 during Hurricane Ike, primarily as a result of salt water inundation and high winds. A sparse population of palms and oaks survived the storm surge, and they remain to convey the historic significance of the boulevard. New trees will be planted to replace the lost plantings.

This technical memorandum provides appropriate treatment for vegetation in compliance with the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties with Guidelines for Cultural Landscapes* in an effort to ensure that the historic character of this important thoroughfare will be preserved, and that the health of the trees—both old and new—will be protected to the extent possible. The treatment recommendations in this memorandum are supplemented by a full set of planting plans (delivered separately).

PROJECT AREA

The work for this treatment plan is generally limited to the planted esplanade in the center of Broadway Boulevard, extending over three miles from 6th Street to 59th Street, although the memorandum also includes some general information about the immediate surroundings in the Broadway Boulevard right-of-way.

METHODOLOGY

The overall project includes both a treatment memorandum and planting plans for the esplanade in the center of Broadway Boulevard. The work undertaken to support this technical memorandum included a series of tasks:

1. A site visit and pre-proposal meeting with City of Galveston Planning Department staff.
2. A stakeholder meeting undertaken on October 17-18 with Planning Department staff, Public Works staff, the City Tree Committee and the Galveston Historical Foundation.
3. Review of historical information including historic photographs, maps, and narratives.
4. Review of existing conditions information, including the City's base map, aerial photographs, and existing conditions photographs taken during 2011

5. Review of current significance evaluations from the Texas Historical Commission.
6. Soil testing.
7. Review of City of Galveston preservation planning documents.
8. Review of recent tree surveys undertaken by Texas Forest Service.

HISTORICAL OVERVIEW

This historical overview focuses on the physical evolution of Broadway Boulevard, providing the basis for an analysis of this historic landscape. The overview is organized into three basic historical periods:

1. Pre-1900, City Building
2. 1900-1930s, City Re-Building
3. 1940s-Present, Preservation

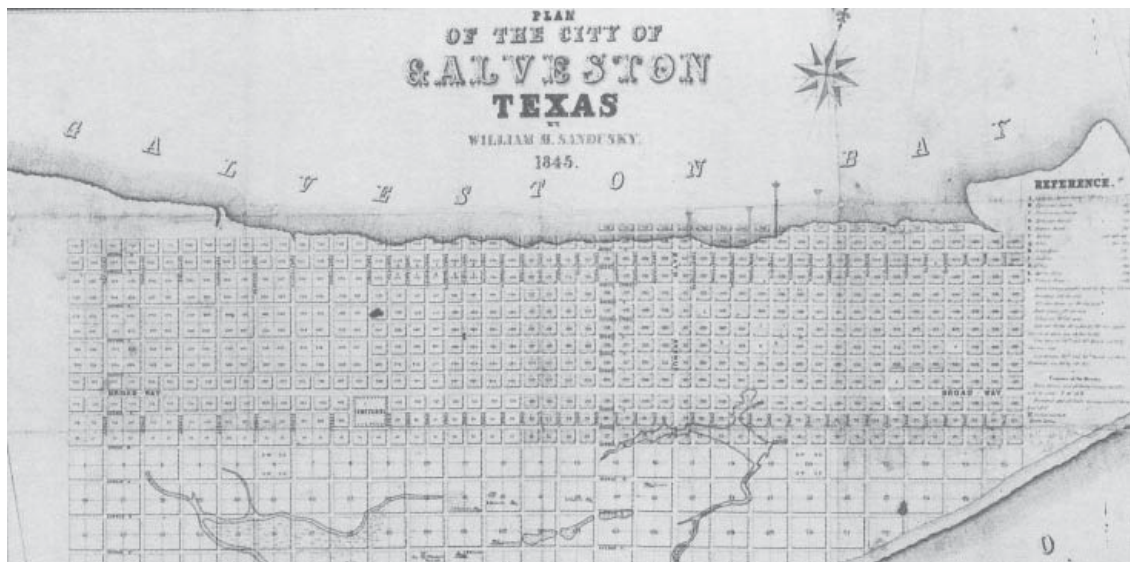
The 1900 hurricane was a critical event in the physical transformation of the city; much of Galveston's subsequent development hinged on its reaction to that one natural disaster.

PRE-1900 CITY BUILDING

The long, narrow island on which the City of Galveston is located is a small sandy barrier island approximately fifty miles southeast of Houston in the Gulf of Mexico. Various small communities occupied the island in the early 1800s, although the frequent and furious storms appear to have discouraged permanent settlement for several decades. As a visitor wrote in 1837, "The roads may be well enough for vessels to ride in, but the land will hereafter, be regarded as a dangerous place for a city or even a residence."¹ Shortly after these words were written, John D. Groesbeck was hired by local Levi Jones to survey the island and create a new plan for the city of Galveston. Groesbeck drew up a gridded

1 Daniel McComb, *Galveston: A History*. University of Texas Press, Austin, Texas, 1986. 28

Plan of the City of Galveston, Texas by William Sandusky, 1845. (Source: Galveston: A History, 1986.)



plan for the city in 1838—modeled on the layout of Philadelphia—with long avenues aligned parallel to the Gulf, and cross streets numbered sequentially.² Taking the place of Avenue J, Broadway Boulevard was the widest of the avenues, and was the first divided boulevard to be constructed in Texas.³

Broadway served as a main thoroughfare for the growing commercial city and was its primary entrance. The boulevard was flanked by an orderly grid of lots and side streets (approximately 14 narrow lots to a block in the original layout), and lined with a diverse array of buildings including churches, residences, and businesses.⁴ Commercial activity centered on the shipping of cotton. Port activities fueled the growing wealth of the community throughout the 19th century, although the frequent hurricanes discouraged substantial outside investment in land-side infrastructure, and water-based connections through ship traffic continued to provide the most vital connection to the outside world.

In 1847, a New York Sun article reported that Galveston's "streets are wide and straight, but their cleanliness is about on a par with New York, which is no compliment."⁵ Despite the addition of gas lighting, sidewalks, and shell paving on the larger roads, the condition of the streets was in many ways deplorable. Back alleys tended to be filled with trash, offal and outhouse refuse, while the gutters of front streets were lined with the dirt from stores and animal manure.⁶ Due to a poorly designed wood-lined ditch system, storm water filled the roads after rainstorms; functioning storm sewers were not constructed in much of the city until 1893. In 1870, a local newspaper editor noted unhappily that "other cities complain of mud, [while] Galveston mourns her sand."⁷ Pedestrians attempting to walk on side streets often found themselves mired in deep sand. In the 1870s,

2 McComb, 43.

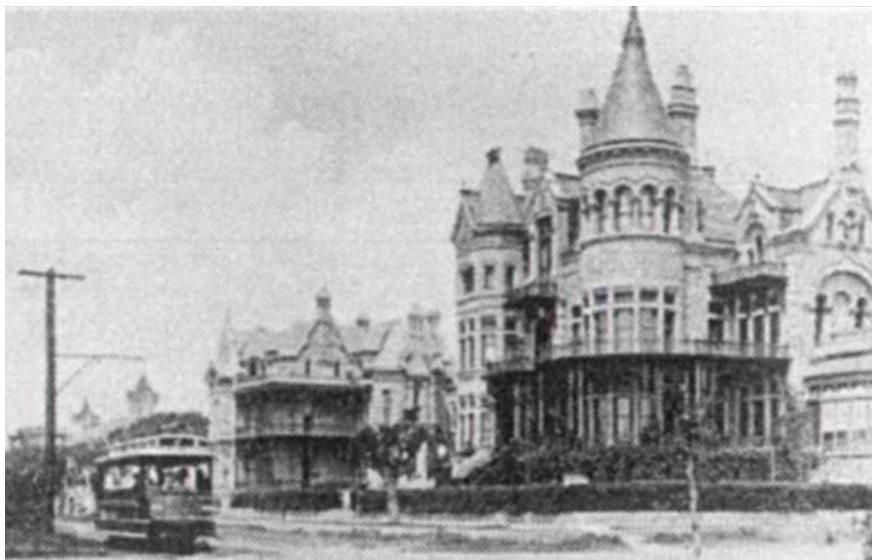
3 Stephen Fox, "Broadway: Galveston, Texas," in *The Grand American Avenue, 1850-1920*, edited by Jan Cigliano and Sara Bradford Landau (San Francisco: Pomegranate Artbooks, 1994), 214

4 National Register Nomination, *East End Historic District* 1976. Prepared by Carolyn Pitts of the Historic Sites Survey, NPS. Washington DC.

5 McComb, 69.

6 McComb, 99

7 McComb, 104.



Broadway at 14th Street, c. 1894 (Source Rosenberg Library)

streets in commercial areas began to be paved, first with oyster shell and then with wood blocks held together with tar (used at the Strand).⁸ The city also improved the condition of sidewalks by constructing them above street level, and paving them in brick, concrete, or asphalt, with brick curbs. Construction of curbed, planted medians on Broadway Boulevard (called “esplanades” at the time) began in 1873.⁹ The medians were soon flanked by streetcar rails. Galveston’s streetcar system was up and running by 1877, providing beach access to visitors through regular service to the shore.

In 1885, a fire swept across Galveston, devastating more than 40 blocks and destroying hundreds of houses, including a swath of Broadway Boulevard. Reconstruction proceeded quickly, and within a few years most of the buildings had been replaced. Broadway Boulevard and other major thoroughfares were lined with new, large and opulent buildings, such as Bishops Palace (or Gresham House), constructed in 1887-1893; and the Sacred Heart Church, built in 1892. Broadway Boulevard offered some of the island’s higher ground and was the city’s primary east-west thoroughfare, and so it became sought after by the city’s wealthiest citizens as they constructed new residences. Local architects such as Nicholas Clayton designed many of the city’s famous buildings such as the First Presbyterian Church, the University of Texas Medical Branch (“Old Red”), and the Gresham House on Broadway Boulevard.

Other important civic structures graced the boulevard, including the Texas Heroes Monument acknowledging the Battle of San Jacinto. Designed by sculptor Louis Amateis, the 74-foot-tall bronze and granite monument is located at the intersection of Rosenberg (25th Street) and Broadway Boulevard. Dedicated in April 1900, the monument “set a standard of monumental civic grandeur that Galveston never duplicated.”¹⁰

In 1899, the Galveston Civic League coordinated a plan for planting along Broadway, with rows of Mexican fan palms (*Washingtonia robusta*), live oaks (*Quercus virginiana*), and oleander (*Nerium oleander*) throughout the esplanade and along sidewalks within the right-of-way. This planting introduced a tropical appearance that, prior to this time, had been reserved for private gardens.¹¹

During this period, Broadway Boulevard exemplified the height of architectural achievement in the city, but was about to face devastation in the form of the 1900 hurricane that destroyed huge sections of Galveston.

1900-1930s CITY RE-BUILDING

The island had suffered through multiple hurricanes in its history, but the 1900 storm was unparalleled in destruction and loss of life. The city’s response after

8 McComb, 104

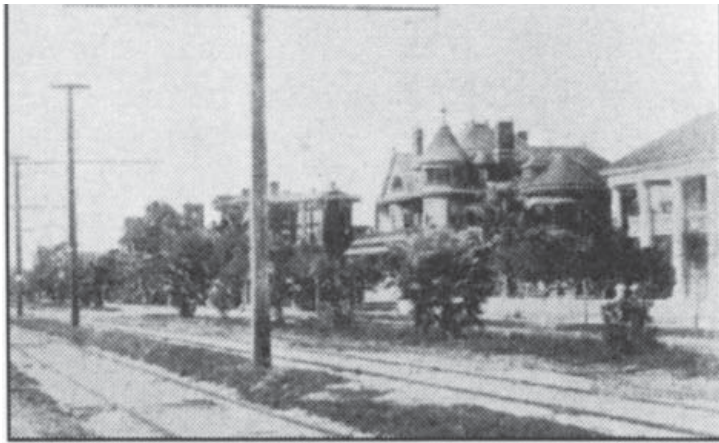
9 “The Esplanades,” *Galveston Daily News* (May 13, 1873)

10 Beasley and Fox, *Galveston Architecture Guidebook*, Galveston Historical Foundation. Rice University Press, 1996, 58

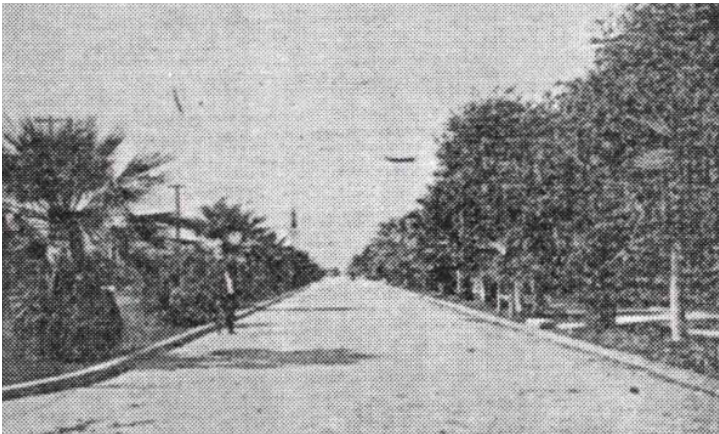
11 Fox, *The Grand American Avenue, 1850-1920*, 223; “Galveston’s Civic League to Honor Pioneers of Organization” by Lillian Herz. *Galveston Daily News* (May 22, 1949)



Grade raising on Broadway near 23rd Street. (Source: Rosenberg Library)



Broadway Boulevard in 1911 after planting by WHPA (Source: Rosenberg Library)



Broadway Boulevard after paving, 1914. (Source: Galveston Daily News, Nov. 1, 1914)



Broadway at 21st Street, looking east after a hurricane, August 18, 1915. (Source: Special Collections, University of Houston Libraries)

the hurricane forever changed Galveston's appearance. Blowing across the island on September 8, 1900, the hurricane killed as many as 6,000 people, destroyed virtually everything within a 1,500-acre zone in the city, and prompted a major re-building effort by the storm's survivors. Although Galveston never regained the commercial prominence it had enjoyed in the late 19th century, it remained an architectural treasure and invested heavily in its civic infrastructure.

After the initial burying of the dead and removal of the storm's wreckage, the city pursued a solution to the hurricane threat in the form of a sea wall made of concrete. Constructed over decades, the sea wall eventually extended more than ten miles along the coastline. In the early part of the 20th century, a second important project was undertaken: that of elevating the grade of the entire city above sea level. An engineering firm was contracted by the city to provide 11 million cubic yards of fill material for this purpose. Citizens jacked up the remaining buildings—including the massive St. Patrick's Church—gravestones, and even attempted, with little success, to lift trees.¹² Broadway Boulevard was re-set at seven to nine feet above sea level. Perhaps as important as the physical effort involved in altering the city was the progressive spirit that fueled it. The city embraced rapidly advancing technologies that were available at the time, providing for automobiles and implementing related changes such as traffic lights (1924) and a bus system (1936). A large new causeway from the mainland to the island was financed with federal funding in 1935, improving access. Previously rough or dilapidated areas of the city were improved and "beautified" with new plantings such as palms, oleander, and live oaks. The Women's Health Protective Association (WHPA) was instrumental in these civic-minded activities. By 1913, the WHPA had planted oaks and cottonwoods on Broadway between 21st Street and 40th Street, among many other planting improvements throughout Galveston.

Broadway Boulevard thrived in this period. Historic photographs from the 1920s reveal a generous road cross section, with traffic flowing along two sets of one-way lanes separated by a lush but orderly planted esplanade. The esplanade contained two separate tracks for streetcars, lined with lawn; palms and other vegetation occupied the central spine. Streetlights marked the boulevard's

12 McComb, 142.

Mature palms and oleanders planted at Broadway. (Source: Rosenberg Library)



intersections with the side streets. A low curb demarcated the edge of the esplanade. The outside edges of the boulevard were lined by a planted strip, providing a vegetated buffer for pedestrians on the sidewalks that ran along the mostly fenced residential properties. This planted area was lined with palms, as well as lawn and other low vegetation. The roadway and sidewalks appear to have been paved in concrete, with brick curbing on the side streets.

Scores of new buildings and monuments were constructed during this period along Broadway. The Sidney Sherman Monument, by sculptors Gaetano Cecere and Pierre Bourdelle and architect Donald Nelson, was added to the corner of Broadway and 7th Street in 1936. The Sacred Heart Catholic Church and Rectory were re-built in 1904 and 1925, respectively. Other stately houses included the Kempner House at 1502 Broadway and the Biehl House built in 1916 at 1428 Broadway in the manner of a Charles Platt “country house.”¹³

As the Depression settled on Galveston, improvements did not cease, but were carried out by the federal Works Progress Administration (WPA), which employed hundreds of men and women to undertake work such as road repair, drainage improvements, and tree and oleander planting.¹⁴

1940s-PRESENT, PRESERVATION

Galveston’s constant exposure to hurricanes eventually limited its growth: its population declined from the 1960s to the 1970s while Houston’s population increased enormously. Houston also benefited from improved railway access and the dredging of a 50-mile ship channel up Buffalo Bayou. Construction of the channel negated Galveston’s status as the premier Texas port. The physical fabric of Galveston deteriorated somewhat during the late 20th century as many businesses and institutions shut down or moved away.¹⁵ However, the lack of incentive to undertake new development in the city spared many of its historic buildings, and a strong interest in the city’s past emerged, institutionalized in the form of the Galveston Historical Foundation that incorporated in 1954. The Foundation was instrumental in saving many of Galveston’s finest houses,

13 Beasely and Fox, 112.

14 McComb, 182

15 McComb, 188-189.



Texas Heroes Monument with plantings along the esplanade, c. 1946. (Source: Tin Types, Sept. 1946)

including the Ashton Villa (1858-59) located at 2328 Broadway. In 1966-67, a Historic American Building Survey (HABS) was undertaken in what would become the East End Historic District, established in 1970, and including the eastern portion of Broadway Boulevard.

Over the second part of the 20th century, the character of Broadway Boulevard evolved as street car traffic was replaced by car traffic. The planted esplanade was reduced from 98 to 36 feet in order to accommodate two more lanes of traffic.¹⁶ Light fixtures were updated and subsurface utility lines were installed. In the 1990s, the City undertook a planting program with the Texas Department of Transportation that resulted in the retention of the palms and oaks, but removal of the oleanders due to concerns about maintaining visibility and sight lines at the busy intersections. Small circular planting areas were added within the esplanade at each road intersection. This program continued through 2008, when Hurricane Ike struck Galveston.¹⁷ This devastating hurricane flooded the city with salt water, killing many trees that were not toppled by the winds, resulting in a loss of almost 40% of the city's trees. The oaks and palms that had graced the Broadway Boulevard esplanade were severely damaged or lost.

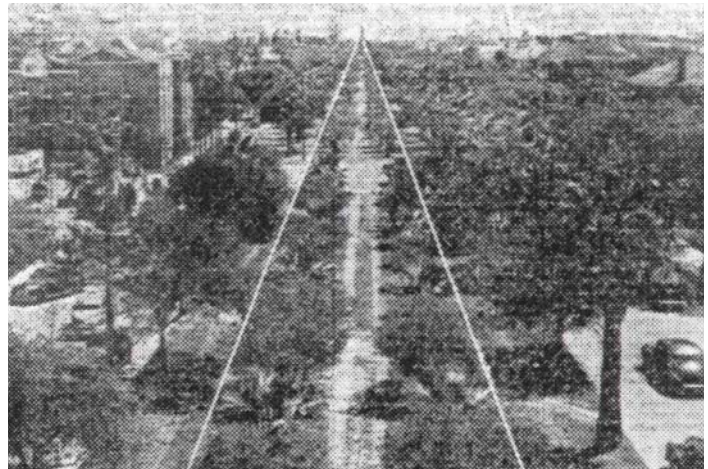
16 Bob Wood, "Man Who Cut Isle Esplanades Called Butcher of Broadway," *Houston Chronicle* (April 9, 1967).

17 City of Galveston RFP#10-11-001, 2011.

View of the esplanade before the widening of Broadway, 1950. (Source: Galveston Daily News, March 23, 1950)



Aerial photograph of Broadway Boulevard showing the proposed esplanade reduction, 1950. (Source: Galveston Daily News, March 23, 1950)



EXISTING CONDITIONS

Today, Broadway Boulevard is approximately 3.5 miles long, spanning 53 blocks. Each block features a planted median approximately 325 feet long and 30 feet wide.

TOPOGRAPHY AND DRAINAGE

The topography of Broadway Boulevard is generally level. The medians are curbed and raised roughly four inches from street level. The planted portions of the medians are raised slightly higher than the curb.

BUILDINGS

The buildings along Broadway Boulevard are typically late 19th- and early 20th-century Victorian, or late 20th-century modern in style. The Victorian structures feature pitched roofs, wood siding or red brick, and are one to three stories tall with porches facing the street. The late-20th-century buildings are typically brick structures with few windows; commercial buildings of this type are typically of painted brick and display large signs.



Examples of historic architecture along the boulevard.



This rectilinear, brick structure is typical of the modern architecture along the boulevard.

ROAD ALIGNMENT AND CURBING

Broadway's alignment through Galveston reaches for 3.5 miles, with three traffic lanes on either side of a 30-foot-wide median. The curbs are concrete, separated from a three-foot-wide concrete sidewalk by a narrow planting strip. Some blocks have a significant number of palms or other trees lining the outer edge of the sidewalk.

Sidewalks along Broadway are primarily of concrete, although a decorative pattern is found in some small areas near historic buildings—eight inch squares of black paving alternating with squares of red brick. In many locations, the sidewalk has been damaged by tree roots. Some brick paved areas are located at the ends of each block of the esplanade.

STRUCTURES

The **Texas Heroes Monument** at the intersection of Rosenberg Avenue is a 72-foot-tall bronze and granite monument encircled by dwarf oleander. The patina from the bronze sculptures and reliefs has stained the granite plinth in some areas.

The **Sidney Sherman Monument** at the intersection of 7th Street and Broadway is a ground-level bronze sculpture of General Sidney Sherman, installed in 1936.

The **War World II Memorial** stands at the intersection of 23rd Street and Broadway. This tall granite structure displays the names of Galveston County residents who gave their lives in World War II. This memorial is surrounded by mulch and low shrubs, with two curb-delineated planting areas on either side of a brick pathway that connects the monument to the 23rd Street crosswalk. A



Patterned sidewalk pavers



Texas Heroes Monument.

granite bench sits just outside of the planting areas on either side. The memorial is in good condition.

SMALL-SCALE FEATURES

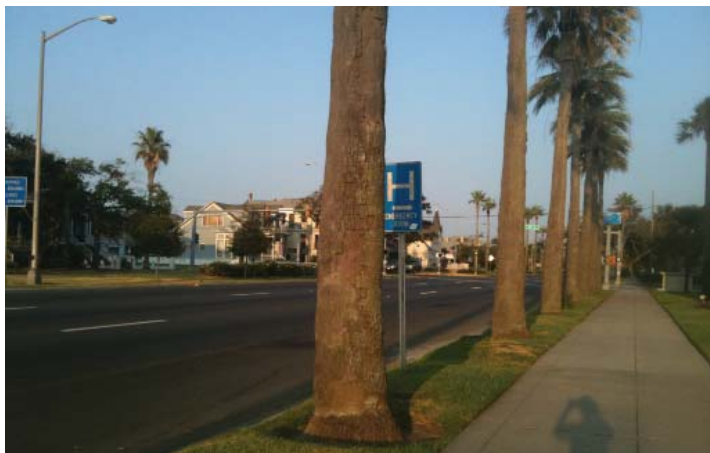
Circular concrete curbing delineates planting areas at the ends of each median. Some of these planting areas contain dwarf oleander, some are mulched, and some appear to be unplanted.

A modern, double-headed street light stands at either end of each median, set slightly further back from the street than the palms. Additional, single-headed streetlights stand in the center of each median. Street lights along the outside edges of the street vary: some are placed in the grass strip between the street and sidewalk, but where the buildings are flush with the sidewalk, a single-lamp, historical-style streetlight is situated in the sidewalk.

Unused aluminum utility poles and street lights stand on almost every median. Wooden utility poles and regulatory traffic signs line the exterior edges of the roadway. Standard regulatory traffic signs and marker signs are also located on either end of each median. Traffic signals and street identification signs are affixed to aluminum mast arm poles at each major intersection. At least one grey



This circular, curbed planting bed is typical of every segment of the median.



Palms with street signage and lighting.



Utility poles.

utility box appears on each segment of the median, usually toward the center, and adjacent to an oleander.

VEGETATION

California fanpalms (*Washingtonia filifera*) and Mexican fanpalms (*Washingtonia robusta*) stand in a double row along the median, interspersed with the occasional live oak (*Quercus virginiana*) and oleander shrubs. The original planting plan of alternating palms and oaks is still evident in some areas, but most blocks have lost enough trees over time to render the pattern unrecognizable. Today, 317 palms and 59 live oaks stand in the median. Typically, the live oaks appear close to the ends of the median. Palms line the curbs along the sidewalks, placed as densely as six feet apart on some blocks. Other blocks may have only two or three palms in total.

Landmarks and memorials along Broadway Boulevard are framed by dwarf oleander plantings. Oleander was selected to replace previous plantings after the 1900 hurricane, and has persisted as the shrub of choice due to its adaptability, beauty, and historical significance.

Aside from the circular concrete planting areas, the median is covered in mown lawn, which is sparse in many areas.

A double row of palms on the median, with occasional oaks and street lights.



ANALYSIS

IDENTIFIED LANDSCAPE SIGNIFICANCE OF BROADWAY BOULEVARD

This summary evaluation of Broadway Boulevard's significance and integrity is based on information developed in the previous sections of this report and by documentation produced for Texas Department of Transportation (TXDOT), which has undertaken multiple projects within the boulevard's right-of-way in previous years.

In a June 17, 2011 letter from the Texas Department of Transportation, the TXDOT Environmental Affairs Division presented information regarding the determination of eligibility to the National Register of Historic Places for Broadway Boulevard. Undertaken as part of a Section 106 consultation process, the letter concluded that the esplanade was the "single significant feature of the avenue that provides continuity of design and association with the City Beautiful Movement."¹⁸

The City Beautiful Movement came to fruition in the United States at Chicago's World Columbian Exposition in 1893 and influenced urban planning for decades afterwards. Emphasizing the importance of achieving social order and moral uplift through monumental architecture, public health improvements, and landscape "beautification," the City Beautiful Movement often resulted in large-scale renovation of urban districts that removed deteriorated fabric and urban "blight" and replaced these with modern infrastructure, new parks and green spaces, street plantings, and Beaux-Arts-influenced architecture. The progressive spirit that fueled this movement fanned out from Chicago to cities throughout the United States, including Richmond, Virginia (Monument Avenue, c. 1890-1925), St. Louis, Missouri (Saint Louis Art Museum, c. 1904), Washington, DC (McMillan Plan, c. 1902), and San Antonio, Texas (San Antonio River re-development, c. 1920-1930). The City Beautiful Movement celebrated the country's growing urbanism in the wake of economic depression in the 1890s and the social unrest that accompanied it. The reform spirit that underlaid this movement also fueled related urban efforts such as sanitary and housing improvements, particularly for less affluent areas of the country's biggest cities.

The design of Broadway Boulevard after the wholesale destruction wrought by the 1900 hurricane reflected the influence of the City Beautiful movement through the introduction of orderly plantings, carefully maintained lawn, and monumental architecture—such as the Sacred Heart Catholic Church—and the maintenance of its grand monuments—such as the Texas Heroes Monument. As a response to the devastation of the storm, the beautification of Galveston's main thoroughfare was a bold and progressive gesture. The integration of urban infrastructure (including the street car tracks and lighting) into the design of the boulevard and its esplanade also exemplifies the progressive spirit of the City Beautiful movement. While the design of Broadway Boulevard was certainly more monumental than many other parts of the city, its architectural flavor ultimately reflected its local character rather than the Beaux-Arts design established at the

18 Texas Department of Transportation correspondence, 2011, 2

Columbian Exposition. To this end, the redevelopment of Broadway Boulevard after the hurricane resulted in the retention of the adjacent Victorian and Greek Revival architecture rather than its replacement with more Beaux-Arts-influenced designs.

Through various existing studies, Broadway Boulevard has been determined eligible for listing on the National Register of Historic Places for its significance under Criteria A (for its association with events that have made a significant contribution to the broad patterns of our history) and C (for its embodiment of the distinctive characteristics of a type, period, or method of construction).¹⁹ Due to the incremental changes to the boulevard's context and edges, particularly along and including the sidewalks, a recent evaluation found that the esplanade was the only remaining feature of the boulevard that retains integrity.²⁰

NATIONAL REGISTER CONSIDERATIONS

Various evaluations of significance and eligibility of Broadway Boulevard have been undertaken over the years. These evaluations explored the broader significance of the resource, and included expanded discussions of the best property categorization for the boulevard.²¹

Historic roads such as Broadway Boulevard may be considered eligible for listing on the National Register as structures, sites, or as part of a district. This memorandum recommends evaluating the boulevard for listing as either as a structure or as a district. As a note, roads are listed less frequently in the National Register as historic structures and are more commonly listed as contributing features within a historic district. A *structure* is defined for National Register purposes as a functional construction that does not provide human shelter, such as a bridge or road. A *district* is defined as "a geographically definable area which possesses a significance concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan for physical development."²² A district may be eligible for listing even if some, but not all, of the features within them retain integrity.

If Broadway Boulevard is determined to be eligible as a *structure*, its entire right-of-way should be evaluated and analyzed, including not only the esplanade but also the roadway, sidewalks and plantings that surround it. If the boulevard is determined to be eligible as a part of a *district*, the entire right-of-way as well as the buildings along both sides of the road and any structures, sites, or open spaces associated with the boulevard should be examined.

The historical integrity of the boulevard has diminished over the years due to changes that have altered its character established during the post-1900 period,

¹⁹ Other criteria include B (for associations with persons significant in our past, and D (for archeological significance). The National Register includes additional criteria considerations as well.

²⁰ Texas Department of Transportation correspondence, 2011, 2

²¹ Survey for the 5000 Block and 5100 Block of Broadway Avenue, Galveston, Galveston County, Texas. Prepared by Knight and Associates, Inc., 2003

²² National Park Service, How to Complete the National Register Form, National Register Bulletin No. 16A, 15.

and it is important to consider whether the entire length of Broadway Boulevard retains sufficient integrity to be listed as a National Register property. The concentration of historic features may warrant a truncated boundary to include only the segment of the boulevard that remains most intact. Preliminarily, it appears that the highest concentration of historic features is along the eastern section of the road from 6th Street to approximately 30th-40th Street.

ANALYSIS

The alignment and location of the boulevard and its esplanade are key characteristics that help convey its historic character and therefore the significance. As the prominent central spine of Broadway, the esplanade helps create the wide, symmetrical cross section that defines the boulevard's historic role as a unique and gracious roadway and the prime entrance into the city. The esplanade's character today conveys the historic "beautification" efforts undertaken in the early 20th century. Based on an analysis of historical photographs, the esplanade's design remains generally similar in character to that of its historic period, although the planting arrangement and some other features have changed over time. It is important to note that the boulevard was never a pristine thoroughfare; as the main entrance into Galveston, its function was paramount (as a thoroughfare for horses, street cars, pedestrians, or automobiles) and therefore basic transportation features are compatible with its historic use.

The following analysis looks at individual features, comparing their historic and existing appearance to define whether they continue to convey the significance of the boulevard. The landscape features that remain from its historic period of significance and that exemplify the City Beautiful philosophy are considered to be *character-defining*.²³ Features that have changed substantially or which have been removed are considered missing. New features added since the period of significance are *non-contributing*, but if the features are consistent with the character of the historic landscape, they may be considered *compatible*.

Esplanade Shape and Alignment

Some historic photographs depict the esplanade as a wide, lawn-covered median with no curbs and the rail tracks running along the outside edge of the esplanade with trees planted in rows towards the center. Other photographs show a reverse of this arrangement, with rail tracks on the inside, planting on the outside edge of the esplanade, and curbing. It is likely that these conditions existed at the same time, but on different blocks. Over time, as vehicular traffic shifted from street car to automobile, the esplanade was narrowed and the roadway widened. The esplanade's curbs have also been rebuilt.

Results: *Character-defining*. Although narrower, the esplanade's shape and alignment are consistent with its historic character.

²³ A preliminary period of significance has not been fully defined, but would include at a minimum the years from 1900-1930, the prime years of activity for the City Beautiful movement in the United States, and also a period in which the boulevard was a focus of new design work by the City.

Spatial Organization

Broadway Boulevard was designed historically with a wide cross section that remains today. The road historically was lined with buildings that maintained a fairly consistent setback from the road right-of-way. The vegetation pattern, with large trees and shrubs lining the center and edges of the road, define views and provide a permeable buffer between the lanes of traffic, sidewalks, and buildings. This condition, though diminished from a lack of surviving vegetation, is still evident in the landscape today.

Results: *Character-defining*. Although the esplanade is somewhat narrower than it was historically, the organization of buildings, open corridors, and plants has been retained.

Vegetation

Substantial numbers of trees and shrubs have been lost over the years to storm events, age, and removal. Palms dominate the plantings today, and appear to maintain the historical designed planting: a double row of evenly spaced trees (usually fourteen or more per block). Originally the trees were solely palms, but later oaks were added. Many blocks, especially those in the central and western segments of the road, were planted in alternating rows of both palms and oaks. Interspersed throughout the esplanade historically were oleanders and other flowering plants—perennials or small shrubs of unknown varieties. Tall oleanders appeared to be planted in an alternating pattern between the trees, with a concentration of flowering plants at the ends of the esplanade on some blocks. Taller oleanders have been removed in recent years due to traffic safety requirements to maintain sight triangles at each intersection; they have been replaced with dwarf oleanders, planted in a hedge-like configuration at the ends of each block. Many blocks have lost numerous trees, but the lawn “floor” has been maintained.

Results: *Character-defining*. Many trees have been lost and not replaced over the years; in addition, the reduction in the number of flowering shrubs has caused the loss of some of the exuberant character of the historical planting plan. Nonetheless, the basic planting scheme is legible in the landscape, and, with the replacement of lost trees, the historic character may be maintained and enhanced. Loss of vegetation is considered a reversible condition, per National Register guidance.

Small-scale Features

Overhead utility lines and street lighting were present along the boulevard in the early 1900s. Based on period photographs from 1915, the lights appeared to be composed of an acorn-style luminaire mounted via a side arm on a Victorian-style metal (probably iron) pole, approximately 20 feet tall and installed along the curb edge of the esplanade, about six or eight to a block. Utility poles appeared to be simple wood poles aligned along the streetcar tracks. Today, the street lights are primarily tall metal poles on a concrete base with a one- or two-armed mounted luminaires, aligned just inside each row of trees on the median. Traffic

signs and signals are located throughout the esplanade, typically at the ends of each block.

Recently-installed circular planting beds defined by a low concrete curb are located at the end of each block of the median. The plantings in these beds have not thrived, and many are missing plantings altogether. Large above-grade utility boxes and street lights stand in some planting beds. Brick paving installed in a semi-circle around the median end of each planting bed provides a refuge for pedestrians. Mulched areas encircle the other half of each planting bed.

Results: Broadway Boulevard's modern small-scale features including street lights, utility boxes, signs and signals are *non-contributing*. Brick paving and curbed planting beds are non-contributing but *compatible*. The replacement of historic lighting with large, historically incompatible lighting diminishes the historic character of the boulevard. New transportation and safety features such as traffic signals and signs, while not historic, are necessary for vehicular and pedestrian safety.



A comparison of streetlights; historic (left) and existing (right). Lights are required for vehicular and pedestrian safety, but the current lights do not contribute to the historic character of the boulevard. Treatment recommendations for lights are included later in this report.

Structures

The Texas Heroes Monument was an important addition to the boulevard as it provided a focal point at the intersection of two important roads in Galveston and stands as a major monumental work of civic art. The monument was restored in 1990-1991, and contributes to the historic character of the boulevard. Other memorials added since the period of significance are sympathetic in scale and design to the boulevard, and are appropriately smaller in size than the Texas Heroes Monument.

Results: The Texas Heroes Monument is *character-defining*. The Sidney Sherman Monument is also *character-defining*. Other memorials are *compatible*.

OTHER ADJACENT NATIONAL REGISTER BUILDINGS AND DISTRICTS

Galveston has dozens of buildings and districts listed on the National Register of Historic Places. The many historic buildings and districts that make up the city are a testament to the stewardship by local government and citizens of historic resources, including other sites not yet listed on the National Register, such as the City Cemetery. An examination of these resources also provides a context for Broadway Boulevard's relationship to the city and its urban character. A "windshield" survey of the urban context for Broadway Boulevard suggests that there has typically been a gradual decline over time in the historic character of the architectural fabric. Mid-20th-century and newer buildings often have broader set-backs from the road, resulting in an inconsistent building edge along the boulevard. "Unsympathetic encroachments" such as large, brightly-colored signs, chain link fencing, and large parking lots also diminish the historic character of the boulevard and its surroundings, but are not "overwhelming."²⁴ In Galveston, as in many cities, these developments are a typical adaptation to modern life.

Galveston's National Register-listed historic buildings and districts include:

Buildings and structures on Broadway Boulevard-

- *Ashton Villa*. An Italianate villa built by James Moreau Brown in 1859.
- *Bishop's Palace*. The 1892 Victorian mansion, one of the largest houses in Galveston, was built by Nicholas Clayton, Galveston's most famous Victorian-era architect.
- *Moody Mansion and Museum*. A late Victorian former residence dating to 1895.
- *Texas Heroes Monument*. One of the finest examples of civic art in the city, the Texas Heroes Monument was created by sculptor Louis Amateis.

Districts-

- *East End Historic District*. This district includes a section of Broadway Boulevard and exhibits "a variety of styles, forms, and purposes." Reflecting the original block layout and encompassing hundreds of historic buildings built between 1840 and 1917, the East End Historic District conveys Galveston's prosperous roots and its response to the 1900 hurricane.
- *The Strand*. This historic business district developed to support the city's port

24 East End National Register nomination, 2

activities, and includes a large collection of important 19th century commercial buildings.

- *Cedar Lawn Historic District*. Near Broadway Boulevard, Cedar Lawn was the city's first fully-planned residential community; the historic district includes Mission/Spanish Revival and Renaissance architectural styles.
- *Silk Stocking Residential Historic District*. Also near Broadway Boulevard, this district represents residential development from the Civil War through World War II, with examples of Colonial Revival, Bungalow/Craftsman, and Queen Anne architecture.
- *Denver Court*. Nominated as an example of historically important community planning and development, the Denver Court neighborhood is significant for its late 19th- and early 20th-century architectural revivals.
- *The Central Business District*- a National Register listed property- Multiple Resource Area.

INTEGRITY

An assessment of historical integrity is based on a quantitative and qualitative analysis of historic and existing conditions to determine if the characteristics and features that distinguished the landscape during the historic period remain. It is important to understand which features remain from the period of significance, which features are missing, and which have been added. In the case of Broadway Boulevard, some previous integrity assessments evaluated the road as part of a potential district and determined that the critical characteristic of the road was its overall spatial organization.²⁵ Other assessments identified the esplanade as the single component of the boulevard that retained integrity.²⁶ The integrity assessment that follows in this memorandum is preliminary, in advance of a National Register nomination for the property or a full historic resources study for the boulevard and its urban context. The primary purpose of an integrity assessment is to support the treatment recommendations that follow.

The seven qualities or aspects of historical integrity defined by the National Register program are location, setting, feeling, association, design, workmanship, and materials. Initially developed for the evaluation of buildings, these were later adapted for historic landscapes.

Location is the place where a historic property was constructed or where the historic event occurred. Broadway Boulevard retains its integrity of location, since its alignment is the same as it was historically. Its elevation was altered after the 1900 hurricane, but this engineering effort is part of the significance of the boulevard.

Setting is the physical context of a historic property or landscape. As defined by the National Register, "whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not

²⁵ Survey for the 5000 Block and 5100 Block of Broadway Avenue, Galveston, Galveston County, Texas. Prepared by Knight and Associates, Inc., 2003

²⁶ Texas Department of Transportation correspondence, 2011, 2

just where, the property is situated and its relationship to surrounding features and open space.” Broadway Boulevard appears to retain a moderate level of integrity of setting. Its eastern end—from approximately 6th Street to 30th-40th Street—retains a relatively high concentration of historic buildings and other historic features (such as vegetation and fences) surviving from the late 1800s and early 1900s that frame the boulevard. However, newer buildings disrupt the historic building alignment through broader set-backs, with parking lots and other incompatible features such as large signs located along Broadway Boulevard. Farther west, larger-footprint buildings and parking lots dominate the setting of the boulevard. However, the overall urban character of the road is consistent with the historic condition and supports Broadway Boulevard’s integrity of setting. In addition, its function as one of the main entrances into the city has been retained.

Feeling is the landscape’s expression of the aesthetic or historic sense of a particular period of time. Broadway Boulevard retains a diminished level of integrity of feeling. While once the home of the city’s largest and most elaborate houses, it is now also the location for its convenience stores, car washes, and gas stations. Its grand character has become somewhat compromised by the mix of building types and uses, and by the diminution of the esplanade and relative lack of the lush, flowering vegetation that once filled it. In addition, the substantial loss of trees following Hurricane Ike resulted in an important diminution of the shady canopy that was a critical part of the Boulevard’s feeling.

Association is the direct link between an important historic event or person and a historic property or landscape. The integrity of association between Broadway Boulevard and the people who established the character of the corridor is intact as a tradition of community involvement in the design of Broadway Boulevard’s esplanade, which continues to this day.

Design is the purposeful combination of elements that create the form, plan, space, structure, and style of a property or landscape. The boulevard’s design has been altered over time, but retains a close relationship to its original cross-section as designed (sidewalk, planted area, roadway, planted esplanade, roadway, planted area, sidewalk). Despite the narrowing of the esplanade in the 1950s, the boulevard retains enough of its historic design to be clearly recognizable when compared to its historic condition. The planting design has been modified, but its essential components have been retained.

Workmanship refers to the physical evidence of the crafts of a particular culture or people during any given period in history. In general, workmanship is often less important to the integrity of a road than it might be to the integrity of a building or another structure such as a bridge. However, minor structural details such as curbs and sidewalks, lighting, or other features may have been constructed with distinctive methods or skill and are still evident in some locations. Integrity of workmanship appears to be diminished, as many of the distinctive brick curbs and other features have been covered over time with concrete.

Materials are the physical elements that were combined during a particular period of time and in a particular configuration to form a historic property or landscape. In the case of a historic road, it is expected that the historic materials would be replaced over time, as paving materials, plants, and lights, for example, would naturally require. Re-paving or reconstruction of curbing would not necessarily affect the overall integrity of the road.

In general, Broadway Boulevard retains integrity through the survival of its essential features that convey its historic significance and character.

TREATMENT

The intent of treatment is to manage changes in the historic Broadway Boulevard landscape that may affect its historic character. Although some aspects of the boulevard have been altered over its history, it appears to retain sufficient integrity to be eligible for listing the National Register of Historic Places, and is an important local thoroughfare with past and present significance to Galveston. Preserving this historic resource is an important goal of the City, the Galveston community, and local preservation groups.

The devastating effects of Hurricane Ike necessitated a new planting effort at Broadway Boulevard to replace the estimated 520 trees that were killed by salt water inundation and wind damage.²⁷ The City recently has undertaken the replanting of several blocks of the esplanade through the efforts of the Tree Committee and the Galveston Island Tree Conservancy and wishes to replant the remaining blocks with new trees in a manner that enhances the historic character of the boulevard and that will also be sustainable and maintainable. Treatment recommendations are intended to guide and support the implementation of this effort. In addition, the scope of this project includes concept-level recommendations for future preservation activities to enhance the historic character of the boulevard through stewardship and compatible new design. Therefore, treatment recommendations will provide specific guidance for the short-term goal of planting rehabilitation in the esplanade, and basic conceptual guidance for the long-term goal of rehabilitation for the overall historic boulevard.

TREATMENT APPROACH

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* defines four possible treatment approaches to historic landscapes: preservation, rehabilitation, reconstruction, and restoration. A treatment option is selected based on the most appropriate match to the goals of the project and the historic landscape's condition.

Preservation is defined as: "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials

27 Galveston ReLeaf Strategic Plan

and features rather than extensive replacement and new construction.”²⁸ The preservation approach is the foundation of this treatment plan because the essential design of the esplanade at Broadway Boulevard remains to convey its historic character; the basic planting design should be preserved and maintained, as it contributes to the historic character of the road landscape.

Rehabilitation is defined as: “the act or process of making possible a compatible use through repair, alterations, and additions while preserving those portions of features which convey its historical, cultural, or architectural values.”²⁹

Rehabilitation is the primary treatment approach proposed for Broadway Boulevard. This approach is appropriate because it recognizes the contemporary demands on the busy roadway while emphasizing the need to retain and enhance its historic character. Also, this approach is the most appropriate for a landscape that faces repeated devastation from natural events; replacement of plantings will necessarily continue to occur over time as a response to hurricanes, as in the past. Rehabilitation allows for the development of a preservation strategy that works in harmony with the City’s desire for enhanced sustainability, accessibility, and limited maintenance budgets.

Reconstruction is defined as “The act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.”³⁰ Because reconstruction involves recreating historic structures, it is not considered a viable option for treatment at Broadway Boulevard. Due to the boulevard’s increased traffic since the early 1900s, it is unrealistic to reconstruct the esplanade exactly as it was during the period of significance or re-create the original planting, as these historic conditions could prevent the safe use of the road.

Restoration is defined as “The act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.”³¹ This approach poses several significant problems for its application to the Broadway Boulevard landscape. Many of the contemporary features and systems in the landscape are required for the safe operation of the road and are required by TXDOT. Removing these features—such as the signs and traffic signals constructed after the period of significance—would render the site unsafe for its users. Integrating these features into the preservation planning for Broadway Boulevard remains an important part of the plan.

According to the Department of the Interior’s *Guidelines for Rehabilitation of*

28 The Secretary of the Interior’s Standards for the Treatment of Historic Properties Guidelines for the Treatment of Cultural Landscapes, Preservation, accessed online in April 2011 at http://www.nps.gov/hps/hli/landscape_guidelines/preserve/index.htm

29 The Secretary of the Interior’s Standards, Rehabilitation.

30 The Secretary of the Interior’s Standards, Reconstruction.

31 http://www.nps.gov/hps/hli/landscape_guidelines/restore/index.htm

Cultural Landscapes, the standards for rehabilitation include:

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- Changes to a property that have acquired historic significance in their own right shall be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

TREATMENT CONCEPT

The goal of treatment for the Broadway Boulevard landscape is to undertake new tree planting in the esplanade in a manner that preserves the historic character of the vegetation. An additional goal is to suggest future rehabilitation efforts that focus on other features besides trees, such as lighting and sidewalks. These goals will be addressed in two phases: Phase 1 will address immediate tree replanting, and Phase 2 will address the future preservation of other features. The preservation of character-defining features is critical to both phases.

While preparing the treatment plan, AECOM staff met with representatives from the Galveston Historical Foundation, City of Galveston Public Works, and the Tree Committee. The discussions during these meetings identified the following

critical preservation issues and other programmatic needs for the esplanade in particular, and the boulevard in general.

Trees

- The trees chosen for replanting should be native or well adapted to the Texas Gulf Coast if possible and able to be maintained in a sustainable manner.
- The trees chosen for replanting should be large enough to replicate the canopy of the missing oaks as quickly as possible.
- New trees should be irrigated to provide them with the healthiest growing conditions possible.
- Palms and oaks chosen for replanting may include a variety of species as long as the trees resemble the historic trees in size, character, and habit.
- Palms should be retained or replanted in the historic pattern in the blocks between 6th Street and 11th Street (where the East End Historic District crosses Broadway). Other blocks should contain a mixture of oaks and palms.
- Some problems with oaks include their tendency to branch at a low height; branches often grow into traffic and parking lanes.
- Trees should be set a minimum of 40 feet back from the ends of the esplanade blocks in order to maintain appropriate sight lines for vehicular traffic.

Shrubs

- Dwarf oleanders may be planted more extensively throughout the esplanade.

Utilities

- Subsurface utilities in the esplanade include: conduit and lines for fiber optic and street lighting, old Interconnect, gas, water, oil, 1940s-era Army Corps of Engineers structures, Centerpoint lines, traffic light conduit and lines, sanitary sewer (likely between 59-47th), and storm sewer (starting at approximately 34th street and running down the middle of the block).

Irrigation

- Irrigation should be installed to provide water to new trees.
- The City should investigate the use of non-potable water and/or water collected in cisterns for tree and shrub watering.
- New irrigation systems should be compatible with the City's existing irrigation system. (In 2011, this includes a programmable, battery-operated system).

Lights

- Future traffic and sidewalk lighting along Broadway Boulevard should be pedestrian-scale if possible, particularly if the oaks planted in the esplanade grow large enough to impede the light projected from the current 30-foot-tall lights.
- New lights should be sufficient to illuminate three lanes of traffic.
- New lights need to meet minimum wind load requirements.

Sidewalks

- New sidewalks should replicate the historic paving patterns and materials to the extent possible.

PHASE 1 TREATMENT RECOMMENDATIONS FOR VEGETATION

Planting new trees in the Broadway Boulevard esplanade presents Galveston with the opportunity to recapture the vibrant historic landscape character that has been compromised by loss of trees from hurricane damage, drought, and age. The following recommendations provide guidance on planting that enhances the historic character of Broadway Boulevard and protects existing historic features within the esplanade. This memorandum has been prepared in conjunction with a planting plan for the esplanade that depicts the new planting design reflecting these recommendations.

Planting Design

The historic tree planting design included a double row of trees along the esplanade. There are approximately 14 planting locations for trees per block, seven on each side of the esplanade. The original tree planting at the beginning of the 20th century was composed of only palms interspersed with oleanders. By 1913, along much of the rest of Broadway Boulevard, oaks were added, alternating with palms in a symmetrical pattern on each block. Today, the palm-only planting persists on the blocks between 6th Street and 13th Street (likely as a response to the proximity to the Gulf with the salt water and wind). Blocks west of 40th Street have palms and oaks in a simple alternating pattern. Further east, the pattern of trees becomes more irregular from block to block. The trees contribute to the character of the historic landscape and distinctive appearance of Broadway Boulevard, and their size enhances the monumental character of the road; these attributes support the boulevard's relationship to the historic City Beautiful movement. In addition, oaks provide much-needed shade for the road, sidewalks, and buildings that line the right-of-way.

In formal tree plantings such as this double row of matched trees, a critical consideration is whether or not to replace all trees simultaneously so that they maintain a consistent size along the entire corridor. In this case, however, the desire to retain mature trees, the need for shade, and the intention to specify a large size for new trees provides a compelling case for retaining all existing trees and replacing only those that were damaged and removed after the 2008 hurricane.

The following recommendations provide guidance for tree planting in the esplanade only.

- Identify the planting scheme existing on each block, based on the documentation of trees in the City's Tree Survey (conducted after the 2008 hurricane).
- Plant new oaks and palms in locations that approximate as closely as possible the historic tree locations.
- Maintain matched tree pairings (for example, two oaks or two palms paired

- together north and south of the esplanade center line).
- Maintain a straight alignment of trees, north to south and east to west, on each block.
- On blocks with a more complicated pattern of oaks and palms, create bilateral symmetry in the design so that the pattern is ordered. (For example, the block between 15th and 16th Streets has been replanted in a pattern of palm, oak, oak, palm, palm, oak, oak, palm on both sides of the median center line.)
- Use live oaks (*Quercus virginiana*) and either Mexican or California fan palms (*Washingtonia filifera* or *robusta*) or Sabal palms (*Sabal texana*) as replacements for missing trees. This memorandum recommends the City consider Sabal palms as the dominant palm species for replacement efforts (see additional information below regarding tree preservation and maintenance considerations).
- Retain healthy living trees and maintain them in a healthy condition wherever possible.
- Consider removing living trees if they are in poor condition, damaged, or hazardous.
- Maintain blocks between 6th Street and 11th Street, where the East End Historic District crosses Broadway Boulevard, in a planting of only palm trees.
- West of 11th Street, plant each block with a combination of oaks and palms.
- Install new trees that are of a large caliper and tall height to provide shade as quickly as possible and to replicate the historic appearance of the boulevard's vegetation.
- Retain and maintain the recently planted trees on blocks between 26th Street and 15th Street.
- Consider replacing the small oaks added to the esplanade after the 2008 Hurricane. Relocate these oaks if possible and replant on other City property.
- Maintain a minimum 40-foot setback of tree plantings from the ends of the esplanade blocks in order to maintain sight lines for vehicular traffic at intersections. Consider removing existing trees that stand within this setback area.

Tree Planting and Esplanade Conditions

Because the esplanade contains a substantial number of unmapped subsurface utilities, tree planting must account for the potential for tree/utility line conflict. In addition, the root systems of older trees should be protected during planting activities in order to maintain tree vigor. The esplanade's lawn cover contributes to the historic character of the landscape and is currently a smooth, unbroken surface; protecting that character is an important component of the tree planting process.

- Adjust designated tree planting locations in the field only if necessary, retaining the linear alignment of trees as much as possible.
- During planting of new trees, protect the existing trees from damage, such as from equipment or compaction.
- Refurbish or replace turf grass damaged during tree planting operations.
- Minimize any grade adjustments within the esplanade to maintain the smooth lawn surface.

- Provide a minimal amount of mulch necessary to protect the new trees and maintain a low mulch profile.³² Consider removing mulch rings when new trees are fully established and replacing with lawn to match the existing.

PRESERVATION MAINTENANCE GUIDELINES FOR HISTORIC TREES

The purpose of preservation maintenance is to forestall early decline and mortality in trees and plants. In the case of Broadway Boulevard, preservation maintenance supports the long-term viability of the trees until such time that their biological rotation age is reached and the replacement program is implemented. For this project, the focus of preservation maintenance will be on three main species: live oak, fan palm and Sabal palm.

Live Oak

Quercus virginiana is the live oak species native to coastal Texas, and is intended to be a predominant component of the overstory along the Boulevard. Live oak is a member of the white oak family, is evergreen, and provides annual crops of acorns that often are a major food source for wildlife.

Planting

Live oaks are recommended for continued planting along the Broadway Boulevard esplanade. Live oaks can survive in a variety of conditions, and are extremely tolerant to drought and heat. However, providing ideal conditions during planting is the best way to establish new trees and insure their long-term viability.

- Excavate planting pits no smaller than 5 feet wide by 12 feet long.
- Use an acid sandy loam type soil mix certified free of invasive species. A mix similar to the native soil, "Galveston loamy fine sand, shell substratum" is recommended.
- Planting pits shall be planted with light, native, ground covers and/or covered with pine bark mulch to reduce temperature fluctuation, inhibit moisture loss, and prevent soil compaction from pedestrian traffic.

Selection Guidelines

- Trees shall be freshly dug and grown in nurseries within Zone 9.
- All plants shall be of specimen quality, symmetrical, trained or favored in development and appearance to be unquestionably and outstandingly superior in form and compactness.
- Trees shall have straight trunks with leader intact, undamaged and uncut. Trees with multiple leaders will not be accepted unless specified.
- Trees with a damaged or crooked leader, bark or abrasions, sun-scald, disfiguring knots, insect damage will not be accepted.

Establishment Guidelines

- Check depth of planting on all trees being tagged at the nursery. If the flair is not visible, the buttress roots must be located. Do not tag any tree with adventitious root growth above the flair or buttress roots.

32 Review International Society of Arboriculture for mulch recommendations.

- Any soil piled up around the crown (flair) of the tree must be removed before the trees are dug.
- Plant trees from October to December.
- Water as frequently as environmental conditions require for establishment and good health for the first two years.

Growth

Live oaks grow quickly when young, and require regular “training” maintenance to insure their form is appropriate as they mature. Without “training” they may grow in an outward spreading form that would conflict with their boulevard setting. A similar potential growth problem is their ability to clone sprouts from their roots, which again, in a boulevard setting, must be handled proactively. Immediate pruning of root sprouts will reduce the waste of energy and resources that would result in allowing them to grow for a prolonged period of time.

Concerns

Live oaks are susceptible to oak diseases including leaf blister and oak wilt. Both of these diseases are controllable through fungicide application (however, this can become more difficult to apply as trees mature). As with most diseases, promoting healthy and minimally stressed trees by maintaining proper soil conditions is the best method for preventing problems. Equipment cleaning and maintenance during pruning activities may help reduce the spread of oak diseases.

Preservation Maintenance

Maintenance is particularly important in the urban setting of Broadway Boulevard. See table below for general expectations, and “Maintenance Pruning” for further detail.

Expected Predisposing Factors	Recurring Program Components
Soil Moisture / Drought	Soil Biology Program
Low Fertility	Fertilization and Soil Biology Program
Soil Compaction	Soil Biology Program
Temporary Inciting Factors	Incidental Treatments as Needed
Saltwater in Soil	Deep root injection of freshwater
Salt Spray (Minor issue for live oak)	Freshwater canopy spraying on young trees
Insect Infestations	Treatment as prescribed by certified arborist
Contributing Factors	Major Treatments as Needed
Oak Wilt	Propiconazole injections

Maintenance Pruning

Pruning of the live oaks should occur in younger specimens for training, and in older specimens for risk reduction and health. Perform all pruning under the supervision of an ISA Certified Arborist, and use all Occupational Safety and

Health Administration (OSHA) and American National Standards Institute (ANSI) required safety practices and equipment. All climbing should be performed using ropes; at no time shall spikes be used.

- Post-Planting Specification – Selectively prune to remove dead, broken, or split branches. In order to develop a well-balanced crown, selectively remove competing leaders, and limbs or shoots that may be developing into competing leaders. Heading cuts may be required, but should only be used on current or one-year old growth, which should be cut back to a bud or older branch that will not assume a terminal role.
- Crown Training Specification – Selectively prune to remove weak or structurally compromised branches to insure the development of strong scaffold branching. Selectively prune to remove dead, dying, or interfering branches during development of the crown and scaffolds.
- Hazard and Maintenance Pruning – Selectively prune to remove dead, dying, diseased, or weak branches and sprouts.
- Clearance Pruning – Selectively prune to remove the minimum number of lower branches necessary to provide clearance to pedestrians or vehicles.

Pruning Frequency

- Post Planting Pruning should occur immediately following planting.
- Crown Trainings pruning should occur only on newly planted trees, in Years 1–6.
- Hazard and Maintenance pruning should occur every 1–3 years as determined by inspections by an ISA Certified Arborist.
- Clearance Pruning should be undertaken as necessary to avoid conflicts.

Texas Sabal Palm

Sabal texana is the tall palm native to coastal Texas, and is suggested to be a predominant palm in the overstory along the Boulevard after the existing Fan palms over-mature. Texas palm is a monocot, and therefore more closely related to grasses than traditional trees. Sabal palmetto, a related species which is native to the Atlantic Coast, could be used interchangeably in this landscape. Both Sabal palm and Sabal palmetto are flexible under high winds, which allows them to survive storms that can break or splinter other nearby species. They are a key tree in overstory recovery following hurricanes, offering shade, aesthetics, as well as soft mast for wildlife.

Planting

Texas Sabal palm and the related cabbage palmetto are recommended for planting along the Broadway Boulevard esplanade. Sabal palms are native to the coastal environment, and are tolerant of heat, cold, drought, and salt conditions that may be adverse to other species.

- Excavate planting pits no smaller than 5 feet wide by 8 feet long.
- Use an acid sandy loam type soil mix certified free of invasive species. A mix similar to the native soil, “Galveston loamy fine sand, shell substratum” is recommended.

- Cover planting pits with pine bark mulch to reduce temperature fluctuation, inhibit moisture loss, and prevent soil compaction from pedestrian traffic.

Selection Guidelines

- Trees should be freshly dug and grown in nurseries within Zone 9.
- All plants should be of specimen quality, symmetrical, trained or favored in development and appearance to be unquestionably and outstandingly superior in form and compactness.

Establishment Guidelines

- Check depth of planting on all trees being tagged at the nursery. If the root initiation zone is not visible, the buttress roots must be located. Do not tag any tree with adventitious root growth above the buttress roots.
- Remove any soil piled up around the root initiation zone of the tree before the trees are dug.
- Remove fronds from any transplanted trees prior to transport and protect the root ball from desiccation.
- Water as frequently as environmental conditions require for establishment and good health for the first two years.

Growth

Palmettos grow upward each year, but the initial trunk diameters stay essentially constant throughout their lifespan. With this in mind, there are concerns for young trees regarding the proximity of fronds to sidewalks, and as the trees mature, for hanging fronds and falling seed pods that require maintenance. Pruning of dead fronds is critical to maintain safety, and removal of seed pods is important to prevent infestations of rodents and other animals that feed on them.

Concerns

Palmettos are susceptible to overpruning or damage to their terminal leader. Any damage to the single growing point (the apical meristem at the terminal bud) may result in loss of the tree. Saltwater intrusion can be a problem for palmettos as well. They appear to be tolerant of occasional salt exposure, as occurs in a coastal environment, but there is a greater concern for the potential of long-term intrusion of saltwater as sea levels rise. The level of saltwater in the soil should be monitored.

Preservation Maintenance

Palmetto maintenance can be simple, but must occur annually. See table below for general expectations, and “Maintenance Pruning” for further detail.

Expected Predisposing Factors	Recurring Program Components
Low Fertility	Soil Biology Program
Soil Compaction	Soil Biology Program

Temporary Inciting Factors	Incidental Treatments as Needed
Saltwater in Soil	Deep root injection of freshwater
Contributing Factors	Major Treatments as Needed
Ganoderma butt rot	Removal of infected palms; soil sanitation
Leaf spot	Proper nutrients in soil; water management

Maintenance Pruning

Palmettos should only be pruned to remove dead fronds and seed pods. Without adequate justification, live fronds shall never be pruned off, as they are the single source of photosynthesis, and are meant to serve for more than one season.

- Specification – Selectively prune to remove dead, dying, and chlorotic fronds, as well as emerging and existing flower stalks. Cut fronds to the petiole base only, being careful not to cut into the trunk. Use appropriate tools such as pruning knives and pruning machetes, or, if necessary, a chainsaw. Pruning should be performed under the supervision of an ISA Certified Arborist, and using all OSHA and ANSI required safety practices and equipment. All climbing should be performed using ropes, aerial lifts or ladders; at no time should spikes be used. On average only the lower 1-2 rings of fronds should need removal; if significantly more fronds are dead or dying, possible decline should be investigated.
- Frequency – Prune dead fronds at least annually; more frequent pruning may be required to manage fruiting.

Fan Palms

California fan palm (*Washingtonia filifera*) and Mexican fan palm (*Washingtonia robusta*) are currently planted along the Boulevard. Native to the southwestern United States and Mexico, these palms are very similar in appearance, habits and requirements. Generally speaking, California fan palms have more robust trunks than Mexican fan palms; also their fronds are a dull green, while those of Mexican Fan Palms are shiny green. California and Mexican fan palms have proven highly tolerant of salt and extreme heat, as well as occasional cold temperatures. These trees are typically associated with hot, dry climates, but have been planted in many zones, including the more humid Gulf Coast.

Planting

It is recommended that Texas Sabal and cabbage palmetto be planted as replacements for fan palms along Broadway Boulevard. Sabal palms have a similar look and habit, are native to the area and are naturally suited to the coastal conditions of Galveston Island. Native plants are always less susceptible to stress, and typically cost less to maintain. Should fan palms continue to be favored, the same planting guidelines provided for Sabal palms may be used.

Growth

Palms grow upward each year, but their initial trunk diameter remains essentially the same throughout their lifespan. With this in mind, there are concerns for young trees regarding the proximity of fronds to sidewalks, and as the trees

mature, for hanging fronds and falling seed pods that require maintenance. Pruning of dead fronds is critical to maintain safety, and removal of seed pods is important to prevent infestations of rodents and other animals that feed on them.

Concerns

Palms are susceptible to overpruning or damage to their terminal leader. Damage to the single growing point (the apical meristem at the terminal bud) may result in loss of the tree. Saltwater intrusion can be a problem as well. Another less common, but possible long-term concern may be the fungal disease “pink rot” (*Gliocladium vermoeseni*). This disease is known to affect fan palms in warm humid climates, and could be a potential problem for *Washingtonia* species along the Texas coast.

Preservation Maintenance

Fan palm maintenance can be simple, but must occur annually. See table below for general expectations, and “Maintenance Pruning” for further detail.

Expected Predisposing Factors	Recurring Program Components
Low Fertility	Soil Biology Program
Soil Compaction	Soil Biology Program
Temporary Inciting Factors	Incidental Treatments as Needed
Saltwater in soil	Deep root injection of freshwater
Contributing Factors	Major Treatments as Needed
Fusarium wilt	Removal of infected fronds; tool sanitation
Ganoderma butt rot	Removal of infected palms; soil sanitation

Maintenance Pruning

Fan palms should only be pruned to minimize the hazard of dead fronds, and remove to fruit. Avoid pruning off live fronds, as they are the single source of photosynthesis, and are meant to serve for more than one season. All pruning should be performed under the supervision of an ISA Certified Arborist, and with all OSHA and ANSI required safety practices and equipment. All climbing should be performed using ropes; at no time should spikes be used.

- Specification – Selectively prune to remove dead, dying, and chlorotic fronds, as well as emerging flower stalks and existing fruit. Cut fronds to the petiole base only, being careful not to cut into the trunk. Use appropriate tools such as pruning knives and pruning machetes, or, if necessary, a chainsaw. On average only the lower 1-2 rings of fronds should need removal; if significantly more fronds are dead or dying, possible decline should be investigated.
- Frequency – Prune dead fronds at least annually; more frequent pruning may be required to manage fruiting.

PHASE 2 TREATMENT RECOMMENDATIONS FOR BROADWAY BOULEVARD

In the future, the City may be in the position to pursue a full rehabilitation of the historic boulevard. This memorandum recommends that further studies be undertaken before the City proceeds with the boulevard's rehabilitation. These studies should include at a minimum a Cultural Landscape Report (Parts 1 and 2) conforming to the guidelines in the *Department of the Interior NPS-28, Cultural Resource Management Guideline* and prepared by an experienced historical landscape architect. A Cultural Landscape Report would provide a full physical history, existing conditions documentation, analysis and evaluation, and detailed treatment recommendations for the entire historic landscape of the boulevard. Rehabilitation for the boulevard should be undertaken in concert with full transportation planning and City oversight in order to coordinate specific Texas Department of Transportation requirements and recommendations with existing conditions (such as utilities) and historic preservation planning for the entire road right-of-way.

In addition, this memorandum recommends that the City pursue a National Register nomination for the boulevard, either as a historic structure or as part of a historic district. There are important considerations for each property type. Very few roads are listed in the National Register as historic structures; however, many roads are listed as contributing features within a historic district. Monument Avenue Historic District in Richmond, Virginia is an example of a comparable historic property, with a substantial avenue, esplanade (or median), sculpture, and numerous historic buildings.³³ Completing a National Register nomination in advance of a Cultural Landscape Report will clarify important information, such as specific information on the eligibility of the property, the appropriate property boundary, and the determination of contributing features.

This Phase 2 list of rehabilitation concepts for the boulevard focuses on landscape features including plantings, lights, sidewalks, paving and curbs, and other small-scale features such as signs and fences.

Vegetation

The goal of planting is to evoke the historic character of the boulevard, which included a colorful and lush landscape of distinctive trees and shrubs. Maintaining the essential composition of the planting plan is critical to retaining the integrity of the landscape. Options to rehabilitate the boulevard's planting include:

- Develop a new planting plan for the entire right-of-way that promotes the use of the vibrant yet stately vegetation that historically graced Broadway Boulevard. Consider undertaking additional research to document a full list of plants used historically in and around the boulevard.

³³ See <http://pdfhost.focus.nps.gov/docs/NHLS/Text/70000883.pdf> for the full Monument Avenue Historic District nomination.

- Consider additional plantings of dwarf oleanders inter-planted with the trees in the esplanade to provide color and to evoke the larger oleanders that were planted historically.
- Consider planting trees along the outer edge of the boulevard right-of-way (other than in the esplanade) that are Galveston “heirloom species” such as crepe myrtles, live oaks, southern magnolia, and oleander. Consider the use of native and/or locally grown trees for all planting endeavors.
- Use species from the most recent Recommended Species List for Galveston developed by the Texas Forest Service, Galveston Island Tree Conservancy and Galveston Tree Committee.
- Consider sustainability, maintenance, and the potential to provide bird habitat when developing new planting plans for the boulevard.
- Work with adjacent property owners to promote the planting of new vegetation along the right-of-way.

Buildings and Structures

The buildings and structures throughout the road right-of-way define the character of, and therefore affect the integrity of, the boulevard. In National Register terms, if the boulevard is listed as a structure, then adjacent buildings and structures are considered part of its setting, and are less critical to its integrity; if the boulevard is a contributing feature to a larger district, then the integrity of the adjacent buildings and structures is very important. Basic recommendations to protect the integrity of the boulevard and the buildings and structures surrounding and placed within it may include:

- Minimize the addition of new structures within the boulevard’s right-of-way and particularly in the esplanade.
- Consider developing design guidelines for buildings and structures within a proposed district that ensure that when new buildings and structures are added in the future, they do not detract from the historic character of the boulevard.
- Protect historic structures within the right-of-way, such as the Texas Heroes Monument. Repair these structures as necessary under the guidance of the appropriate specialists.

Circulation

Circulation features such as the paved roadway, sidewalks, and curbs are frequently altered to reflect the changing requirements of evolving transportation systems. It is possible to update paving materials in a way that does not detract from the integrity of the historic landscape. However, it is critically important to maintain the historic design of the road, with its straight alignment and full right-of-way width.

- Maintain the alignment of Broadway Boulevard.
- Maintain the full width of Broadway Boulevard’s right-of-way and its designed cross section.
- Minimize any realignment of the esplanade to account for turning lanes or other intrusions.
- Repair and replace existing sidewalks as necessary; consider the use of historic materials and patterns for new sidewalks such as the black and

red checker-board pattern found near Ashton Villa. Consider working with adjacent property owners to coordinate this effort.

- Consider replacing concrete curbs with formed brick curbs that match the historic curb design.

Small-scale Features

Small-scale features of roadways are often utilitarian in nature, such as traffic signs or lights. This was the case historically and continues today, although the current large number of small-scale features within the boulevard's right-of-way detracts somewhat from the historic character of the landscape: their large size, design, and materials do not appear to be not compatible with the City Beautiful movement's aesthetic. In addition, many new small-scale features have been added over the years to the esplanade in an uncoordinated manner, including utility boxes and concrete-edged planting beds.

- Consider removing the concrete-edged circular planting beds that post-date the period of significance.
- Consider replacing the tall light posts currently located in the esplanade with new lights that are pedestrian-scaled and compatible with the historic character of the boulevard. Ensure that the proposed lights meet minimum requirements for illumination of sidewalks and roadways, and other TXDOT standards such as wind load requirements. Add a greater number of lights if required to meet lighting requirements.
- Consider minimizing the use of large signs within the boulevard right-of-way.

Public Involvement and Interpretation

The City of Galveston has actively involved its citizens in the preservation of its historic resources. This is an important endeavor to maintain, as it provides the opportunity for the City to explore a full history of the historic boulevard and to engage the local community in its preservation.

- Consider developing a new interpretive and wayfinding program that helps visitors and residents understand the history of the boulevard and its relationship to the rest of Galveston.

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