



Niagara Falls State Park  
Robert Moses Parkway South Segment  
Project Scoping Report

## APPENDIX E: HISTORIC PARK & PARKWAY LANDSCAPE ASSESSMENT

### Table of Contents

- I. Olmsted and Vaux Design Principles
  - A. Introduction
  - B. Historical Background
  - C. Summary of Original Olmsted and Vaux Landscape Character
  - D. Historic Images
  
- II. Existing Condition of Historic Landscape Character
  - A. Introduction
  - B. Landscape Unit 1: American Falls Viewing & Access Area
  - C. Landscape Unit 2: Parkway, American Rapids & Riverfront
  - D. Landscape Unit 3: Parkway Overpass & City Entry
  - E. Landscape Units Summary
  
- III. Emergence and Development of the Parkway in the United States
  - A. Introduction
  - B. Summary of Parkway Design & Evolution
  - C. Parkway Character Comparison Chart

### List of Plans and Charts

- Niagara Reservation Historic Images
- Niagara Reservation Olmsted & Vaux Plans & Sketches
- Landscape Units Plan
- Parkways Chart

## I. OLMSTED AND VAUX DESIGN PRINCIPLES

### A. INTRODUCTION

This section includes a Historical Assessment of the Olmsted and Vaux Design. Heritage Landscapes researched and provided the historical documentation from an Olmsted and Vaux perspective into the development of two design alternatives. The analysis is based on historical research and interpretation with respect to recreating the park in a manner that does justice to the original intent. Where appropriate, concepts workable in the 21<sup>st</sup> century were integrated with the idea of maintaining historical character. The analysis includes historic design and landscape character interpretation necessary to define the alternative from the perspective of meeting New York State OPRHP objectives.

The analysis addresses the landscape character of relevant historic models and their potential application to this project in terms of character-defining features to include:

- Land uses and patterns, in the form of a park-like setting for the enjoyment of visitors
- Response to natural systems, to include the influence of the natural river system on the Olmsted & Vaux design
- Visual relationships, views, and vistas, particularly in Niagara River, rapids, falls and Goat Island
- Topography and grading, generally sloping toward the river
- Vegetation in terms of broad categories of groundcover, turf, meadow, specimen trees, groves, woodland, wetland
- Circulation elements, such as drives, parking, paths, trails
- Landscape structures, including bridges, retaining walls, gazebos
- Details and small-scale elements, such as lighting, curbs, signage, furnishings, and others

The analysis presents the landscape character of several historical models that can support historic-based alternatives. Also as a part of this task, historic images documenting relevant design concepts and for alternative schematics were studied. A discussion of the historic landscape character with selected images is presented below.

### B. HISTORICAL BACKGROUND

The land that is currently the Niagara Falls State Park was not always reserved as such. During the 1800's mills began to be constructed on Bath (now Green) Island, taking advantage of the hydropower available on the Niagara River. In 1834, in the midst of this development, Rev. Andrew Reed and Rev. Thomas Mattheson identified that the scenery of Niagara Falls was of public value. Thus began the debate over the importance of perpetuating industrial and commercial uses versus conservation of the scenic beauty of the site. In 1869, landscape architects Fredrick Law Olmsted and Calvert Vaux began to contact individuals to address the destruction of the scenery at Niagara Falls and generate public interest in preserving the Falls. These efforts, in conjunction with others, culminated in the establishment of the Niagara Reservation in 1885 as the first State Park in

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

the nation. The following year, the Commissioners of the State Reservation at Niagara requested that Olmsted and Vaux prepare a plan for the restoration of the scenery of Niagara Falls.

In 1887 Olmsted and Vaux compiled and presented the *General Plan for the Improvement of the Niagara Reservation (General Plan)* to the President of the Board of Commissioners of the State Reservation of Niagara. This report and accompanying plan helped shape the development of the reservation over several decades, as is evident in numerous plans and photographs. Within the *General Plan*, Olmsted and Vaux stated, “The conservation of the natural scenery at Niagara, [is] accepted as the primary purpose of the undertaking.”<sup>1</sup> Other principal objectives on the plan were to “re-establish a permanently agreeable natural character” where the land had been utilized for industry, and “make a suitable provision of roads and walks, of platforms and seats, at the more important points of view, and of other accommodations, such as experience has shown to be necessary to decency and good order when large numbers of people come together.”

The *General Plan* implementation was partial, but structured and guided improvements were implemented throughout the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Judging from the first orthographic aerial photograph of the site, taken in 1927, the *General Plan* was still the guiding document for the management of the reservation through the 1920s. As a result, the historic period for the early design spans from 1887 to 1927.

In the 1950’s construction began on three major projects within the Reservation – the Robert Moses Parkway, the American Rapids Bridge and the Observation Tower. These projects represented a major departure from the *General Plan*. The Robert Moses Parkway replaced the Riverway with an expressway-style parkway with internal landscape and views out toward the Niagara River and screening toward the city.

Despite the changes wrought by construction of the Robert Moses Parkway, portions of the built Olmsted-Vaux plan remain through circulation alignments, vestiges of vegetation and remnants of small-scale elements. The overall general landscape patterns of today match the historic plan, through some changes are evident. The most obvious changes are the loss of unity between the parkway and adjacent park landscape, and a loss of cohesion between the eastern and western ends of the park.

In summary, key points in the chronology on the Niagara Reservation are:

- 1817 First bridge to Goat Island built on site of the contemporary American Rapids Bridge – it is destroyed by ice flows in 1818 and replaced by two bridges linking the mainland to Bath (now Green) Island and Goat Island
- 1823 Construction of mills begin on Bath Island – incremental expansion continues through 1884
- 1834 Rev. Andrew Reed and Rev. Thomas Mattheson identify that the scenery of Niagara Falls is of public value
- Historic maps and photographs indicate that mid-19<sup>th</sup> century along the Niagara River near the falls is principally industrial and includes manipulation of the shoreline for mill-

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

- races and canals – the privately owned Prospect Park is established during this time, adding to the array of commercial ventures of the area
- 1869 Fredrick Law Olmsted and Calvert Vaux contact individuals to address the destruction of the scenery at Niagara Falls and generate public interest in preserving the Falls
  - Over a period of more than 20 years public opinion vacillates from perpetuating industrial and commercial uses to conservation of the scenic beauty of the site
  - 1880 Proposal submitted to New York and Canadian governors to preserve the Falls
  - 1883 Governor Grover Cleveland signs a bill appropriating property at the American Falls and establishes a Board of Commissioners.
  - 1885 Niagara Reservation established as the first State Park in the nation
  - 1886 The Commissioners of the State Reservation at Niagara requests that Olmsted and Vaux prepare a plan for the restoration of the scenery of Niagara Falls
  - 1887 The Commissioners submit the *General Plan for the Improvement of the Niagara Reservation* by Olmsted and Vaux to the Legislature with endorsement of the general principals
  - The first 30 years of the Reservation see a gradual implementation of the Olmsted and Vaux Plan – approximately 150 buildings are removed and gravel drives constructed (later converted to macadam) as part of the initial improvements. Removal of other elements proceed over time to include realignment of former industrial modifications to the shoreline and ponds within the Reservation.
  - 1898 Bath Island is renamed Green Island after Andrew H. Green, president of the park commission
  - 1901 Administration building and stone bridges to Green and Goat Islands constructed
  - 1910 Elevators replace inclined cable railway
  - 1927 An early orthographic aerial photograph of the Reservation captures the as-built character. Although the Olmsted and Vaux plan was not fully implemented, it served as the guideline for the construction and management of the Reservation during this period, particularly at Prospect Point and in the realignment of the river shoreline
  - 1950s Construction begins on three major projects within the Reservation – the Robert Moses Parkway, the American Rapids Bridge and the Observation Tower
  - 1960 American Rapids Bridge to Goat Island completed
  - 1961 Robert Moses Parkway completed
  - 1961 Observation Tower completed
  - 1966 Designated a National Historical Landmark
  - 1985 A section of the Robert Moses Parkway in the Niagara Falls State Park is removed
  - 2001 The Office of New York State Parks closes one lane of the parkway along the rapids

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

C. SUMMARY OF ORIGINAL OLMSTED AND VAUX LANDSCAPE CHARACTER

Study of a number of Olmsted designs for parks and parkways led to the identification of a distinct historic landscape character along Robert Moses Parkway. This landscape character can be subdivided into character-defining features that together comprise the historic landscape. The list, as outlined above, is elaborated on according to those landscape features found in the original Olmsted and Vaux General Plan.

Land uses and land patterns of the Olmsted and Vaux design consisted of a park-like atmosphere that transitioned from the rigid city blocks to the south to the more irregular naturalistic river features to the north. The scenic character of the reservation blended the two elements together in a harmonious way through views, vegetation, and circulation features open to public access.

The original Olmsted and Vaux design was highly designed in response to adjacent natural systems of the river, rapids, and falls. Placement and alignment of drives, paths, and vegetation were dependent on naturalistic features to form changing and picturesque views. Larger gathering areas and overlooks were placed at more prominent landscape features, such as the falls, to accommodate large crowds.

Visual relationships, views, and vistas were also an important part of the Olmsted and Vaux design to give visitors visual access to the river, rapids, and falls. Visual relationships were closely tied to sloping topography, circulation routes, and clusters of vegetation. Topography served to physically and visually separate the falls area from the city, while circulation routes provided the vehicle in which the landscape was unfolded and discovered. Vegetation screened and framed views of specific features, in attempt to choreograph the visitor experience. Use of these elements and principles created a programmed visual sequence along the Riverway, the main vehicular route, which allowed visitors to view the river and rapids, building anticipation for the experience of the falls to come. Dense vegetation visually separated the Riverway from the city with limited views.

In terms of topography, the original ground plane of the Olmsted and Vaux design was generally level with gently sloping grades toward the river. Along the rapids and falls, the topography was more steeply sloping with abrupt rocks and cliffs. Topography aided in separating the river edge from the adjacent and directed landscape views and vistas.

Vegetation shown in photographs of the partial build-out of the Olmsted and Vaux plan mostly consists of an open lawn ground plane dotted with scattered canopy trees. Tree rows and specimen trees were concentrated along the drives, while more dense and naturalistic clusters of vegetation were placed along the river edge. Deciduous shrubs were grouped at pedestrian path intersections and at landscape structures. Plant materials were proposed to be native species in simple arrangements. In general, the turf, specimen trees, tree rows and groves created a park-like atmosphere that framed picturesque views out toward the river and falls. Dense vegetation along the Riverway and river corridor also screened views to the nearby neighborhoods.

Circulation elements consisted of gravel vehicular drives, parking areas, and pedestrian paths. The main drive, the Riverway, is shown on the Olmsted and Vaux plan as a two-lane curvilinear road with limited localized vegetative islands that provide the route in which to experience the landscape.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

The curves along the drives were designed to direct and redirect ever changing views of the adjacent natural features. Expansions and pull-offs along the drives created areas for parking. Paths were also curvilinear with some straight segments providing more direct routes between landscape features. Path widths varied with the widest segments along the falls for large groups, while narrower, secondary paths disperse visitors throughout park. Planned pedestrian routes were generally positioned to west, affording unobstructed views to the natural scenery of the area. This designed system of wide and narrow paths can be seen in the landscape today, generally retaining their historic configurations.

Landscape structures in the original Olmsted and Vaux design included walls, curved metal railings along the river, and rustic gazebos, gatehouses, among other landscape structures. Small-scale features included lighting fixtures, simple wood slat benches, stone benches, and boulders for sitting. The overall character for these elements reflected the broader design style of simplicity and minimal use of ornament through natural materials.

Overall, many of these character-defining features form the structure of the park and parkway today. Portions of the built Olmsted and Vaux plan remain through circulation alignments, vestiges of vegetation and remnants of small-scale elements. The overall general landscape patterns of today match the historic plan, though some changes are evident.

#### D. HISTORIC IMAGES

Analysis of historic landscape character of the Niagara Reservation included the creation of two collections of selected historic photographs and plans. These figures are included as collections *Niagara Reservation Olmsted & Vaux Plans & Sketches* and *Niagara Reservation Historic Images*. The plans and sketches were mostly taken from the general plan and preliminary sketches from 1886 and 1887. The plans outline the system of walks and drives along the river, rapids, and various islands. In addition, clusters of vegetation screen and frame views along drives, paths, and open lawn areas. The variety in sketches shows a number of variations on the Olmsted and Vaux design. Historic images of the Niagara Reservation show a similar character with open and framed views, scattered trees, open lawns, curvilinear gravel drives and paths.

## II. EXISTING CONDITION OF HISTORIC LANDSCAPE CHARACTER

### A. INTRODUCTION

This section provides an assessment of the degree to which the existing south segment of the Robert Moses Parkway (or the mainland section of the Niagara Falls State Park) retains the historic character of the early 20<sup>th</sup> century, which were the formative years of the New York State Reservation at Niagara. The assessment was undertaken by Heritage Landscapes in the winter of 2009. This section contains a summary of the targeted and limited research and analysis methods applied to this project. These methods are used to assess culturally significant landscapes as outlined in the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (Guidelines)* and other federal guidance on cultural landscape preservation. The Niagara Falls State Park, formerly called the Niagara Reservation, is defined as a designed historic

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

landscape because of the proposed design captured in the lithograph and documented in drawings, which were studied by Heritage Landscapes in the F. L. Olmsted National Historic Site Archives Collection.<sup>ii</sup> This landscape design was proposed by recognized master landscape architects Frederick Law Olmsted, Sr. and Calvert Vaux. Primary sources for the comparison of current landscape character and intended design are the *General Plan for the Improvement of the Niagara Reservation (General Plan)*, with text and lithograph, and the relevant archival drawings presented on *Niagara Reservation Olmsted & Vaux Plans & Sketches*, fold-out plan.

Drawing on research and field reconnaissance this section presents a summary of the existing landscape character and comments on the relationship between the intended historic Niagara Reservation character as proposed by Olmsted and Vaux in relation to what the landscape character is today. The two bases for this task are an understanding of the historic design and intent, and an on-the-ground study of the contemporary landscape of the Robert Moses Parkway and surrounding state park land. This study of the Robert Moses Parkway South Segment existing conditions yielded three distinct landscape units:

- 1 **American Falls Viewing & Access Area**- the core area at the gorge edge and falls with parking and connections to the city
- 2 **Robert Moses Parkway, American Rapids & Riverfront**- a narrow, sloping parkland area between city streets and river edge
- 3 **Robert Moses Parkway Overpass & City Entry**- highway area with grade separation and ramps and open landscape of former river edge fill

The boundaries of each unit are identified on the *Landscape Units Plan* as color line overlays on a contemporary aerial photograph at a scale of 1-inch equals 200-feet. Unit 1 is outlined in yellow, Unit 2 in green, and Unit 3 in red. Identifying and defining these units facilitates a clearer understanding of the Robert Moses Parkway landscape as it exists, and aids in comparing that character to the landscape intended by Olmsted and Vaux.

Within the three landscape units are a variety of features that characterize the landscape. The *Guidelines* refer to these elements as the character-defining features.<sup>iii</sup> These character-defining features are identified and enumerated as a series of interrelated, unique aspects of the cultural landscape. They include natural systems, spatial organization, views and visual relationships, topography, vegetation, circulation, water features, structures, and site furnishings and structures. Based on these features, boundaries of landscape units are delineated by landscape character. Aspects that effect landscape character along and adjacent to the Robert Moses Parkway include the parkway road itself, including width, materials, edge conditions, horizontal and vertical alignment, the visual relationships to and from it – particularly river, rapids and falls views, and the character of the surrounding landscape with pedestrian paths, a bike path, trees and lawn, informal or more formal plantings, and furnishings.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

B. LANDSCAPE UNIT 1: AMERICAN FALLS VIEWING & ACCESS AREA

Unit 1 encompasses the core landscape of the Robert Moses Parkway South Segment that serves as the primary area for US Niagara Falls visitor access to the falls and visitor services. A park-like landscape with open green spaces and scattered trees surrounds the visitor center and provides a scenic setting in which to view and experience the falls. Changes in grade and the progression from higher to lower ground through the lower tree grove near the falls create a powerful visitor experience. Historically, this area has also been referred to as Prospect Park, Prospect Point Park, The Grove, or the Upper and Lower Groves. Unit 1 also includes Park Parking Lot No. 1, serving visitors to the Falls. This parking lot lies on property that was not part of the original Niagara Reservation, therefore, there is no historical significance regarding its presence on Park land. Edge trees and walls that surround the lot limit its visual impact from within the Park.

Vehicular circulation in Unit 1 consists of Robert Moses Parkway, running along the eastern border with the city, and Park Parking Lot No. 1. The lot is accessed from the Robert Moses Parkway to the east at three points and is approached via the parkway from the Upper Rapids area to the south. The long arrival sequence through the Park separates visitors from the city and provides views of the river and rapids, building anticipation for the experience to come. As the parkway turns north and enters Unit 1, the city gains visual dominance. Parking signage and commercial attractions compete to draw visitor attention (see Figure 1). Once cars are parked and visitors progress on the paths down the slopes toward the American Falls, views back to the city are screened by the slope and trees. This visual separation of park from city exists today as initially envisioned in the Olmsted and Vaux plan.

Pedestrian visitors and city residents enter from the east, as they did historically from the railroad station downtown, but today from hotels in the area. They are intercepted at the visitor center or filter through a park landscape on a network of paths to the primary viewing area at the edge of the falls. The Olmsted and Vaux plan for the Niagara Reservation depicts a system of wide and lesser paths and open groves of trees in this area. The historic pattern can be discerned today, although fewer buildings are shown on the 1887 plan than are now present. In general, paths and service roads within Unit 1 retain their historic configurations. The widest walks are located in areas of the most significant traffic along the cliffs and closest to the American Falls (see Figure 2). A network of secondary paths disperses visitors throughout the park. Two areas of significant change are the walks and plazas associated with the visitor center and the ticketing gateway leading to the observation tower.

Today, while flowering plants and gardens are located at the city edge and near the buildings, the Prospect Park area is predominantly a lawn and trees landscape with some steep slopes to the north covered in native trees. The existing landscape and planting character that predominates in Unit 1 has mature and younger native trees scattered through a lawn (see Figure 3). These trees over lawn are in harmony with the historic character of the parkland. In the *General Plan*, Olmsted and Vaux outlined their vision for the use of vegetation on the reservation. “The Mainland division is designed to be planted with a view to its being ultimately covered with forest trees.”<sup>iv</sup> They go on to recommend that the species for this reforestation effort be selected from those found growing natively on Goat Island. They also clearly advocated for a natural and simple landscape that would serve as a frame for the colossal, powerful water cataract of the falls. In the report they penned, the

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

transformation prior to 1887 from “the Grove” to “Prospect Park,” with its “pseudo wild gardening, terraced slopes, flower beds, ornamental trees,” was regrettable.<sup>v</sup> The original designers expressed concern that “once the reason for excluding decorative detail is lost sight of, there is nothing to hinder the... gradual transformation of the Reservation into an affair of the sumptuous park and flower garden order, than which nothing would be more deplorable.”<sup>vi</sup> The simplicity of lawns, slopes, trees and views was intended, which is what is found throughout much of Unit 1 today. There are several high use areas of Unit 1, however, that feature ornamental plantings and gardens. Examples include the rows of hawthorns at the entrance to the parking lot, the gardens on the west hillside, and the flower and shrub beds at the visitor center, and various intersections and memorials (see Figure 4). To a degree, small flower gardens and seasonal displays have been a part of the Niagara Reservation continually over the past century or more. However, according to the initial recommendations of Olmsted and Vaux, the primary resources of river, rapids and falls should retain visual and experiential dominance.

The Olmsted and Vaux recommendations on natural character, simplicity and minimal ornament also applied to site furnishings and structures as well. Regarding built elements including “walks, roads, bridges, stairways, seats and standing places, ...the smaller and less showy or in any way obtrusive upon the attention such furniture is, the better the primary purpose will be realized.”<sup>vii</sup> In the narrative addressing objectives and proposed character they emphasize that “the conservation of the natural scenery at Niagara... [is] the primary purpose of the undertaking (of the creation of the Reservation)” and that “nothing of an artificial character should be allowed a place on the property, no matter how valuable it might be.”<sup>viii</sup> An example of this unobtrusive approach is the horizontal safety railing designed by Vaux for use along the cliffs, a modern variation of which is still in use today. For seating, Olmsted and Vaux suggested benches made of stone reclaimed from buildings that were cleared to make way for the Reservation, the seats of which were to be darkly stained wood slats, reinforced as needed with metal. The overall objective was harmony and simplicity. Contemporary structures in Unit 1 include the visitor center and observation tower. While thoughtfully and aesthetically designed in recent times, these structures differ from the naturalistic character and the focus on the experience of the falls as described by Olmsted and Vaux.

The landscape of Unit 1, principally the Prospect Park area that is directly associated with the American Falls, exhibits a landscape character of falls and rapids access, views from a landscape of variable width paths and informal shade trees, with gorge edge railings, benches and visitor service and Gorge access buildings. The pattern of walks and trees does to an extent match the pattern shown on the Olmsted and Vaux 1887 *General Plan*.

### C. LANDSCAPE UNIT 2: PARKWAY, AMERICAN RAPIDS & RIVERFRONT

Unit 2 is a relatively narrow, sloping landscape with paths along the rapids and some pedestrian linkages to the city. The double roadway and median of the Robert Moses Parkway step up slope from the river at the south to the city at the north. The parkway landscape character is open, with close mown turf and flowering trees planted in a roadside style as visual accents. There are small areas of native woodland on the slopes to the north with oaks and a dense understory. The parkway double roadway and open landscape dominates the center area with regularly sloping turf and flowering trees. The area directly adjacent to the rapids and river is organized around the shoreline,

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

native trees and pedestrian paths. The principal pedestrian path is located adjacent to the rapids and river while a second spur path is slightly uphill. Plantings of evergreens and flowering trees between the path and parkway roadbeds are in a contemporary style of tree clusters by variety. The land in this unit was part of the original reservation.

Separation of park from city is a landscape characteristic of most parkways and was incorporated into or advised in the original design of historic urban parks. Edge conditions vary in parkway and park development but topography and plantings were often used to create separation. Olmsted and Vaux proposed a buffer planting along the city edge to visually separate the Reservation from the adjacent neighborhood and urban views. Formed by vegetation and the change in topography, much of Unit 2 is separated from the city. There are exceptions where the neighborhood and city views are open between 4<sup>th</sup> Street and Holly Place, with thinly planted trees, and at the northwest end of Unit 2 where the Parkway passes under the contemporary Goat Island Bridge and merges with Buffalo Avenue (see Figures 5 & 6). Olmsted and Vaux recommended laying out the original carriage road “as far from the shore and as much out of sight of Goat Island as possible”, while still allowing for periodic views of the Rapids through tree trunks.<sup>ix</sup> Native and ornamental trees scattered along the bank today serve this purpose, as seen in Figure 7. The central spine of Unit 2, however, through which runs the Parkway, is much open and offers a typical highway feeling, not an intimate carriage ride through the an open parkland or tended woodland as proposed by Olmsted and Vaux. A representation of the intended character is pictured along a service drive/path in Unit 1, which approaches the Olmsted and Vaux description (see Figure 3). The double lanes, grassy median with rows of ornamental trees, smooth-graded grassy shoulders, and high, highway scale lighting communicate a character and visitor experience that is not particularly park-like. However, it is framed in part by wooded slopes to the north with native trees along the riverfront and does afford views of the river and rapids.

The sparse trees and high level of open grassy slopes is one aspect of the current character that diverges from the Olmsted Vaux intent. Trees are held back from the parkway for some distance. In the Olmsted and Vaux plan, trees were maneuvered around in laying out a variably curving roadway. The report states that the road should be divided when needed “in order to avoid injury to a few promising trees of spontaneous growth.”<sup>x</sup> Today, the majority of the existing trees are positioned at the edges of Unit 2, with the exception of periodic, formal plantings of ornamental species such as hawthorn and crabapple (see Figure 8). The current character is also expressed in small-scale perennial and shrub beds at selected pathway intersections (see Figure 9). As noted previously, the simplicity of the landscape envisioned in the *General Plan* was contrary to small scale gardens. In speaking of the vegetation character, particularly in reference to adding plantings along the mainland shore, the report narrative recommends planting densely for a naturalistic character and allowing plants to “grow in natural forms, at frequent intervals along the shore, and in occasional groups of upland, enough of it being introduced to prevent... a grove or orchard-like monotony of trunks.”<sup>xi</sup>

The limited pedestrian paths along the rapids and riverfront largely follow the historic alignments. The path system has been simplified, however, with fewer branching paths. A partial remnant of a branching walkway and seating area can be seen in Figure 10. Paths and steps have also recently been added to connect the city to the historic bridge to Goat Island. Furnishings and signage in Unit 2 tend to be contemporary in character, including lighting and directional signage. Large

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

lights used to illuminate the Rapids dot the shoreline (see Figure 12). In summary, the character of landscape Unit 2 display park-like edges, with slopes and trees to the north, and native trees along the path and river, with a central roadway way landscape characterized by the double roadbeds and median and clusters of flowering trees.

D. LANDSCAPE UNIT 3: PARKWAY OVERPASS & CITY ENTRY

Unit 3 consists of the easternmost portion of the Robert Moses Parkway South Segment. The area includes a divided “expressway” type highway, with accompanying signage, bridges, and abutments that provide a grade separated access to the city and the park.

The character is of an interstate highway serving vehicles moving at high speeds (see Figures 12 & 13). The interchange roadways and ramps provide access routes for city and park traffic through an open landscape, planted along the overpass abutments with dense tree and shrub massing in a contemporary style. The mounded and engineered grades separate vehicles from the river, altering and redirecting views away from the river. The area is more highway than parkway and is not a pedestrian friendly environment. A considerable portion of the landscape comprising Unit 3 is fill, imported for the construction of the overpass and the extension of the river shoreline. This fill area was formerly water and not a part of the original reservation. It has an open, sloping character with few trees, some mown turf, areas of tall grass meadow and a relatively straight river shoreline. Bicycle paths provide access to the park from city to the north and west, merge, and continue along the river into the Unit 2 (see Figure 14). Vegetation is even more limited than in Unit 2, with the major planting massed at the overpass and carried out in a contemporary style with large groupings of single shrub types adjoin each other in drifts inter-planted with some trees (see Figure 15). Small stands of volunteer trees and understory are located along the riverbank (see Figure 16). The dominant vegetation within this unit is mown lawn and meadow, with the character of a uniform highway landscape of sloping ground.

There is one remnant of the original Niagara Reservation in Unit 3. Riverside Drive, a small residential street in the northwest corner of Unit 3, is a short section of “The Riverway” designed by Olmsted and Vaux. Riverside Drive begins at Buffalo Avenue, heads south toward the river, then bends to the southwest, where it continues at an angle for about 400 feet before turning onto Holly Place and returning to Buffalo Avenue. The angled section of Riverside Drive is the northern section of the loop that wrapped around a pond at the eastern end of the Niagara Reservation. In Olmsted and Vaux’s design they depict the river adjacent to this section of “The Riverway,” with a carriage turn-around and summerhouse on a small promontory. The turn-around and summerhouse were not constructed, however, and the carriage drive was wrapped around a small pond. This loop alignment is visible on a 1927 aerial photograph, although the pond is dry and vegetation is started to grow (see Figure 17). Houses that lined the drive in 1927 are also visible, and these homes remain today (see Figure 18). The large trees near Riverside Drive and Buffalo Avenue are remnants of the pre-parkway Reservation and, along with the segment of Riverside Drive, provide a glimpse of the historic park character within Unit 3. The former pond and south segment of the drive loop were removed and filled during construction of the Robert Moses Parkway.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

E. LANDSCAPE UNITS SUMMARY

The contemporary conditions of these three landscape units have been compared to their historic character. Historically, the drive through relatively cohesive parkland along the river, shown on the Olmsted and Vaux plan as “The Riverway”, was a gracefully curving, relatively narrow drive with stopping and viewing areas along it. Today that cohesion is missing. The three different units have varied character, visual qualities, feeling and features. Unit 1 to the north, at the gorge and falls, is the most park-like. The existing Robert Moses Parkway is not effective in unifying the access roads and the park landscape. A pronounced character shift is exhibited at the east end of the parkway where an overpass interchange of highway design is completely foreign to the character of the state park. The Olmsted and Vaux designs for “The Riverway” serve as a touchstone and inspiration for the potential character and qualities of the Robert Moses Parkway and the adjacent park landscape.

III. EMERGENCE AND DEVELOPMENT OF THE PARKWAY IN THE UNITED STATES

A. INTRODUCTION

This report section defines several topics of relevance to the Robert Moses Parkway, including results of historical research, parkway context, and summary illustrated reporting. This work includes research of the original design and intent for “The Riverway”, which was the carriage drive along the American Rapids designed in the 1880s by Olmsted and Vaux and later replaced with the Robert Moses Parkway. For contextual comparison with “The Riverway,” early parkways designed by Olmsted and Vaux and others have been researched. A summary of the evolution of the parkway in the United States through the period of construction of the Robert Moses Parkway highlights the similarities and differences in design intent of the two eras. In summary, this research includes compilation and review of:

- Historical Data, including photos of the Robert Moses Parkway 1920’s layout
- Archeological Studies
- Design Data for Other Historic Parkways
- Buffalo Olmsted Vaux and Olmsted Brothers Parkways
- Louisville Olmsted Parkways
- Colonial Parkway, Colonial National Historic Parkway
- Other New York Parkways
- Historic documents pertinent to the project addressing landscape and roadway design
- Niagara Reservation Master Plan (original Olmsted & Vaux)

The findings of this research effort have been compiled in a summary of original design and a comparison chart of multiple parkways throughout the nation. Together these products form a platform for further project development.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

**B. SUMMARY OF PARKWAY DESIGN & EVOLUTION**

To better place the construction of the Robert Moses Parkway within the broader context of parkway design, the following summary of parkway design and evolution has been prepared. Three distinct eras of parkway design have emerged over the last century. Details of each are addressed below. This summary draws on a previous review of parkway context for Colonial Parkway conducted by Heritage Landscapes.<sup>xii</sup>

**B1. The Emergence of Parkways: 19th Century Intraurban Scenic Roads Through The City<sup>xiii</sup>**

The movement to develop “parkways” followed previous movements from the 1830s to 1860s to develop rural cemeteries and large parks. This type of road, a wider corridor than an average city street, accommodated multiple roadways for horses and carriages and provided space for tree planting and lawns, as well as walks for pedestrians and later bicycles. The early parkways of the late 19th century were intraurban, functioning within a single municipal area. Developed as linkages connecting public parks and as a means of organizing urban growth, early parkways principally linked parks within cities, though often linked large, park-like residential suburbs to parks areas.

Following the lessons of Central Park, which separated the circulation systems of its various modes of traffic, the early parkways also provided separate pathways for carriages, pedestrians, and horseback riders, though these paths generally paralleled each other within the linear corridor of the roadway. Some early parkways radiated out from parks in geometric form along the straight lines established by a pre-existing urban grid. Others, planned later as parts of park systems designed concurrently with a city, were laid out to wind more sinuously through the city, often because they were placed along river corridors or geological features unsuitable for development as residential communities.

Olmsted and Vaux were leaders in the evolution of parkways, with the first use of the term in association with generous designed roadways extending from Prospect Park, Brooklyn. The concept of a drive for carriages linking parks to parks and other parts of the city reappeared shortly thereafter in Olmsted and Vaux’s 1869 design for Riverside, Illinois which called for a “park way to Chicago” which was partially constructed while a commuter train link was fully developed. In their 1870 design for the Buffalo Park and Parkway system, three parks, The Park, The Front and the Parade were connected by parkways and city streets. The parkways varied from 150 to 200 feet in width and were constructed by the late 1870s. The Buffalo parkways included about twenty miles of spacious corridors with two or three drive surfaces, walks, and four to six rows of trees. This system uses a series of intersections to form smaller greenspaces, circles and squares, that later held fountains, prominent statues and were surrounded by notable architecture. The parkways of Boston, Minneapolis, Kansas City and other urban systems were all developed using similar design approaches and standards.

These examples are just a few of the many parkway systems constructed in conjunction with urban parks in the late 1800s and early 1900s. Though not as extensive as the examples listed above, cities with similar systems included Louisville, Denver, Seattle, and a county system in Essex County, New Jersey. Of particular note, Lake Washington Boulevard in Seattle provided a nine-mile route through the Washington Arboretum, along residential and commercial streets. With narrow rights-

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

of-way, the boulevard meandered through small parks, leading to and along the shores of Lake Washington where the roadway provides visual and physical access to the lake front. The Seattle system of boulevards and parkways provide another example of variations on the parkway theme with scenic qualities as an important component.

**B2. The Modern Parkway: Interurban Pleasure Drives Linking Cities, & Sites Along Scenic Corridors<sup>xiv</sup>**

In the early twentieth century the parkway concept expanded. As it evolved over the decades, a parkway came to be generally defined as a relatively narrow corridor of land for linking destinations or proceeding along a scenic route. By the 1920s and 1930s, parkways were principally devoted to passenger vehicles although equestrian, bicycle or pedestrian trails were also accommodated in some instances. Generally controlled access routes, parkways did not afford direct access to abutting owners. However, variations existed in each parkway design.

With an eye to the future, Olmsted drafted an article that addressed automobile traffic on parkways, which is one of the earliest written references to accommodating this mode of transportation. The article primarily suggests simply separating automobiles as another lane in the ever-widening traffic corridor. This traffic corridor required a 400' width simply to accommodate traffic lanes with separation, without regard to scenic features. However, Olmsted also notes that through automobile traffic is likely to become a significant mode of transportation, and suggests that the automobile drive could be located next to a railroad depressed into the grade. By putting the two higher-speed, longer-distance modes together, at-grade crossings of pleasure and commuter traffic would be eliminated.

One of the first automobile parkways to be constructed was the Bronx River Parkway, completed in 1923. Within a few years, new parkways sprouted up in its wake, including the Westchester County Parkway System, the Long Island Parkways, and the Mount Vernon Memorial Highway. Designed in the mid- to late-1920s, these parkways generally adopted the major innovations of the Bronx River Parkway—the idea of limited access, use of numerous grade-crossing structures, and implementation of these ideas in new places. Because these parkways followed so closely on the development of the Bronx River Parkway and attempted to mimic its success, they exhibited only minor refinements in the design concepts presented in the original.

As a class, these parkways designed prior to 1930, shared common goals and features. Broadly speaking, they retained a close tie to their origins in 19<sup>th</sup> century park design. For example, all these parkways were planned and implemented by park and planning commissions. As a result, they were under the jurisdiction of park commissions, and recreation remained a prime consideration in their design. This ensured that driving along the parkway was, in itself, a pleasant recreational activity in addition to recreating in the linked parks. In many cases, large new parks were constructed concurrently with the parkways. These concerns were consistent with the 19<sup>th</sup> century conception of the parkway; however, these modern parkways functioned on a much larger scale. The compression of time and space permitted by the automobile allowed parkways to link parks within an entire region and surrounding suburbs, rather than within city limits.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

**B3. Post-World War II Parkways: Designing For Scenic Highways<sup>xv</sup>**

In comparison to the many miles of parkways designed in the 1930s, relatively fewer parkways were designed following World War II, as a result of a new breed of highway called the “complete highway.” The complete highway was characterized by a variety of features including safety, utility, economy, and beauty with similarities to parkways. These highways utilized the design features pioneered in parkway design—limited access, a new alignment not based on the routing earlier roadways, grade crossing separations, and divided roadways. However, a crucial difference emerged between the complete highway and the parkway. The highway was designed for speedy and efficient transportation, as demonstrated by new names, such as freeway, thruway, and expressway. Spurred on by the increasing importance of the car for business and social interaction and the truck in shipping goods, the new highways were designed to connect cities, people, and commerce with direct and expeditious routes.

These new goals required some alterations in the design standards promulgated by parkways, which had emphasized pleasure and recreational driving on curving, scenic routes. For example, because highways needed no recreational activities along the route, the right-of-way did not widen to encompass lakes or views; it moved as a uniform swath through or around cities or through countryside. Freeway alignments also used even longer and flatter curves, which drivers could navigate at higher speeds. Continuously curving alignments, with one curve blending into another, were adopted for their ability to maintain driver interest and to emphasize a curvilinear character. Vertical alignments were also graduated the extent possible to allow trucks to maintain their velocity when climbing hills. Medians and shoulders were widened to allow for future expansion for increasing the flow of people and goods. Although roadside planting was still considered important, plantings on highways emphasized utility (preventing erosion, decreasing maintenance) and safety (preventing accidents) rather than scenic concerns such as framing views or providing visual separation from the surrounding area.

These changes in highway design naturally affected parkway design. The parkways of this era acquired higher speeds, flatter curves, and flatter grades. In some ways, parkways of the post WW-II era were nearly indistinguishable from their contemporary freeway brethren. Additionally, it appears that the distinction between the two was not of great concern to designers of the 1950s, who were usually designing both parkways and highways. For example, articles of the time do not make great distinctions between routes named parkway or highway. Both were considered complete highways, a significant improvement over previous road types. In addition, the methodology used to design both roads was essentially the same.

The great distinction between parkways and the new highways seems to have been primarily the parkways’ exclusion of all traffic except for passenger vehicles. As a result, parkways could still claim a linkage to recreational purposes. The only other distinction was the parkway’s somewhat greater emphasis on the scenic beauty aspect of the complete highway’s principles of safety, utility, economy, and beauty, manifested in the scenic quality of the corridor and attention to the design of bridges, plantings and other features.

The Robert Moses Parkway fits into this last phase of parkway evolution. The first segment of the parkway was constructed by the early 1960s, with characteristics similar to contemporary complete

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

highways of the time. The road exhibits a divided median that separates east and west travel lanes, which are situated into the sloping topography. By 1966, the interchange of the Robert Moses Parkway had been constructed in the full highway style. This change in design is evident through the grade separation of the two roads, each with modern highway vocabulary. Constructed separately and independently of each other, the various segments of the Robert Moses Parkway show the evolution of parkway and highway design during this time period. (see Figure 19 and 20).

C. PARKWAY CHARACTER COMPARISON CHART<sup>xvi</sup>

The detailing of parkway design and evolution from the three eras is further expressed in the parkway character comparison chart. As an attempt to compile design data for other historical parkways, the chart answers multiple questions for several parkways. Who were the designers? When was the parkway designed and constructed? What was the basic design concept of the parkway, ie. route through city or countryside, linkage of destinations, recreation or scenic enjoyment? What modes of movement were accommodated? What was the character of the parkway including the length, width of right-of-way, horizontal alignment and curvature, vegetation and scenic qualities? By setting out a series of examples, the chart describes the origins and development of parkways as a landscape type and places Robert Moses Parkway within this context.

More specifically the attached chart elaborates on the design characteristics of thirteen parkways throughout the United States. The parkways included on the list are Bronx River Parkway, Westchester County Parkway System, Long Island Parkways, Mount Vernon Memorial Highway, Merritt Parkway, New York City Parkways, Baltimore-Washington Parkway, The Garden State Parkway, Going-to-the-Sun-Road, Skyline Drive, Colonial Parkway, Blue Ridge Parkway, and Natchez Trace Parkway. The parkways are grouped in the chart according to eras of construction to include Early Parkways 1920s to 1930, 1930s Urban/Regional Parkways, Post-World War II Parkways, Park Roads, and NPS Scenic Parkways, ranging in date from the early 20<sup>th</sup> century into the late 1960s. In particular, the following characteristics are noted in the chart for each parkway:

- Name of Parkway
- Location
- Agency & Designers
- Date
- Miles Long
- Surrounding Landscape Character & Views
- Topography
- Max. Grade / Curvature
- Design Speed
- Roadway Width-Lanes
- Median
- Right-of-Way
- Other Design Features

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

In all cases, a parkway is a scenic feature; simply stated, it is defined as an access road within a park. These characteristics and parkway character-defining features are important to consider in the development of the Robert Moses Parkway, as these factors influence the feel and experience of the traveler on the roadway. Overall, this chart provides a relevant context of the parkway movement within the United States in which to compare the design and evolution of Robert Moses Parkway.

Niagara Falls State Park  
Robert Moses Parkway South Segment: Project Scoping Report  
Appendix E: Historic Park & Parkway Landscape Assessment

APPENDIX E ENDNOTES

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<sup>i</sup> Frederick Law Olmsted and Calvert Vaux, *General Plan for the Improvement of the Niagara Reservation*, 1887; as reprinted at <http://www.niagaraheritage.org/genplan.htm>;p6.

<sup>ii</sup> Olmsted and Vaux, General Plan, and FLOHNS Archival Collection review of drawings for Job number 671, January 15, 2009.

<sup>iii</sup> Charles A. Birnbaum, with Christine Capella Peters, *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, (Washington DC: 1996), 5, and Robert R. Page, Cathy A. Gilbert, Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*, U.S. Department of the Interior National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program (Washington DC: 1998), 15.

<sup>iv</sup> Olmsted and Vaux, General Plan, 1887: 17.

<sup>v</sup> Olmsted and Vaux, General Plan, 1887: 4.

<sup>vi</sup> Olmsted and Vaux, General Plan, 1887: 3.

<sup>vii</sup> Olmsted and Vaux, General Plan, 1887: 6.

<sup>viii</sup> Olmsted and Vaux, General Plan, 1887: 6-7.

<sup>ix</sup> Olmsted and Vaux, General Plan, 1887: 16.

<sup>x</sup> Olmsted and Vaux, General Plan, 1887: 16.

<sup>xi</sup> Olmsted and Vaux, General Plan, 1887: 17.

<sup>xii</sup> "Cultural Landscape Report for Colonial Parkway," LANDSCAPES Landscape Architecture•Planning•Historic Preservation (now Heritage Landscapes), 1997; and LANDSCAPES Landscape Architecture•Planning•Historic Preservation (now Heritage Landscapes), 1998.

<sup>xiii</sup> "Cultural Landscape Report for Colonial Parkway", 1997; "Colonial Parkway Context for National Register Nomination", 1998, Heritage Landscapes.

<sup>xiv</sup> "Cultural Landscape Report for Colonial Parkway", 1997; "Colonial Parkway Context for National Register Nomination", 1998, Heritage Landscapes.

<sup>xv</sup> "Cultural Landscape Report for Colonial Parkway", 1997; "Colonial Parkway Context for National Register Nomination", 1998, Heritage Landscapes.

<sup>xvi</sup> "Cultural Landscape Report for Colonial Parkway", 1997; "Colonial Parkway Context for National Register Nomination", 1998, Heritage Landscapes.