result, ultimately, in the destruction of what they value.\textsuperscript{13} Ironically, Olmsted’s concealment of the artifice of his intervention (a tradition continued today in the national parks) permits the misconception that places like Yosemite are not designed and managed.

Olmsted’s work at Central Park and at Yosemite was informed by similar ideas about the value of natural scenery, the importance of free public access, and the necessity for managing the landscape (albeit concealed) to realize the value of both the scenery and the access. He advocated both the preservation of remote wild lands and the restoration of urban landscapes that had been ravaged by human use, and he continued to work across this spectrum of environments for the rest of his career.

\textbf{Niagara Falls}

\textbf{Niagara Falls is more than a big waterfall. For Americans it is the} waterfall. Niagara has long been, for many, the epitome of the sublime, offering the experience of a powerful natural feature of superhuman scale that inspires awe and fear. To others it has been a spectacle, a source of cheap power, a historic landmark, a livelihood. Niagara has never meant the same thing to everyone, and its meanings have changed over time, reflections of cultural context. The falls and their frame have been repeatedly reconstructed, literally and figuratively, their form and meaning revisited by generation after generation. (See illustrations on pp. 163–67.)

Niagara Falls was a popular tourist destination throughout the early nineteenth century. By the 1860s, however, it had become a natural wonder that failed to astonish. Water flow over the falls was diminished by diversions for power and industry, and visitors had to pick their way along muddy paths bordered by dilapidated factories. On his return from California and Yosemite, Olmsted joined the campaign to establish Niagara Falls as a public reservation and restore its scenic qualities.\textsuperscript{14} Here was sublime scenery that was freely accessible to urban populations. Niagara provided Olmsted with the opportunity to apply the ideas he had outlined in his report on Yosemite. In 1879 he was appointed a consultant to the state survey that studied the falls and recommended that the state of New York repurchase property along the Niagara River and the American Falls (the state had sold the land bordering the Niagara River and Falls in 1806). The state survey also proposed that the landscape around Niagara be designed as a frame within which the falls could be experienced in diverse ways.\textsuperscript{15}

In 1886, after Olmsted had lobbied for the preservation of Niagara for over twenty years, he and his partner Calvert Vaux were hired to prepare a plan for Niagara Reservation.\textsuperscript{16} Their report of 1887 analyzed the disappointment of first-time visitors to Niagara and identified two types of response: the failure of the falls to meet expectations and the distraction posed by the “objectionable artificial character” of the context.\textsuperscript{17} They con-
cluded that no improvement could “increase the astonishing qualities of Niagara” and therefore focused on enclosing river and falls within a frame of “natural scenery.” This required the removal of all “artificial” structures: mills, other industrial buildings, and the “illuminating apparatus” used to project red, white, and blue lights on the falls at night. In some areas they proposed merely to remove walls along the riverbank and allow the river “to take its course.” In others they planned to “hasten the process already begun” by nature, thereby achieving more than the “unassisted processes of nature.” For example, they recommended that stone retaining walls along the mainland shore be removed, the shoreline reshaped, and the old stone reused to form low walls with pockets of soil and planted with “willows, rushes, ferns, irises, ... and other water side plants of the region” so that they looked just like the “natural, low, rocky shores of the neighboring islands.” Though Olmsted and Vaux were “far from thinking that all that is required to accomplish the designed end is to ‘let Nature alone,’ ” this was the very impression they sought to create by their “unobtrusive” interventions.

Olmsted and Vaux designed paths and prospects—carriageways with views, shoreline footpaths, and overlooks with railings to prevent crowds from tumbling into the chasm. The plan choreographed the experience of the visitors to accommodate their large numbers (as many as ten thousand per day) and their diverse expectations and to prevent destruction of the scenic qualities they came to see. Most visitors arrived by train in large numbers; to disperse these crowds, picnic areas and other attractions were provided near the train station, with paths leading off toward the river and the falls. Olmsted recognized that most visitors would be satisfied with a short walk to the falls and a brief view of the spectacle. For those who preferred to contemplate the sublime scenery in solitude, there were footpaths along the river to more remote areas.

Olmsted’s plan of 1887 successfully accommodated tourists with diverse values and expectations, but failed to address the fundamental conflict at Niagara Falls in coming decades—the tension between scenic landmark and source of power. By 1909 the view enclosed by the frame of natural scenery so carefully designed by Olmsted and Vaux was of “American Falls Running Dry.” (See the photograph on p. 164, showing only a trickle of water flowing over the falls.) The conflict between sublime scenery and material resources was not limited to Niagara. The split in the conservation movement—between those who would preserve sublime scenery and those who supported managed use of the material resources it represented—grew wider and progressively more bitter through the twentieth century. Future reconstructions of Niagara occurred against this changing cultural backdrop.

The conflict between the consumption of the falls as symbolic scenery and as a source of power has been addressed by one international board after another and been the subject of multiple treaties between Canada and the United States. The specific proposals of each successive board reveal the
changing cultural context within which Niagara was seen. The recommenda-
dations of the international boards set up in 1926 and in 1967 provide strik-
ing similarities to and telling differences with the report by Olmsted and
Vaux in 1887.

The 1926 board was appointed to determine how the "vanished beauty"
of Niagara Falls might be restored.28 The board investigated commercial,
hydrological, and aesthetic issues (water use, tourism, patterns of water
flow and erosion, and the relationship between water depth and the green-
ish-blue color of the Horseshoe Falls) and employed this data "to plan the
betterment of the spectacle by using water to greater scenic advantage."29
To this end, they proposed the use of concealed weirs to divert more water
over the American Falls, to raise the water level in the rapids, and to "throw
more water against the head of Goat Island."30 Since tourists visited mainly
in the summer, they suggested that power companies be permitted to divert
water (10,000 cubic feet per second on each side) from October 1 to April
1.31

The 1967 board was set up to investigate "measures necessary to preserve
or enhance the beauty of the American Falls," with specific concern for the
prevention of erosion and accumulation of fallen rock that was transforming
the falls from a waterfall into a cascade.32 As they had been in 1887 and
1926, the concerns were aesthetic and symbolic, for the falls were deemed
"one of the most spectacular natural phenomena in the world" and "a sym-
bol of international amity and cooperation."33 In an elaborate series of stud-
ies spanning seven years, the board probed, sampled, tested, modeled, and
evaluated the American Falls. A temporary dam was built to drain the falls
for five and a half months, so that the dry river bottom and rock face could
be inspected, photographed, and mapped and so that instruments could be
installed in fissures to measure water pressure and ground movement.34 All
this information was used to construct a model of the American Falls one-
fiftieth its actual size, with turbulence, mist, illumination, and volume of
water all carefully simulated. The model was built so that rocks at the base
(talus) could be removed, and a committee of landscape architects charged
with the task of "choosing a permanent arrangement of talus that would
have the most dramatic effect."35 Finally, the flow of water over the "real"
Niagara Falls was reduced and then increased from 8,000 to 15,000 cubic
feet per second and the visual effects recorded and evaluated. (See illus-
trations on pp. 165–67.)

After all this manipulation of the falls, both actual and virtual, the Inter-
national Joint Commission concluded that "man should not interfere with
the natural process," for the falls are a "reminder of man's relationship with
his environment. Indeed, this is the very essence of their attractiveness."36
Let the talus accumulate, and do not stabilize the rock mass, because to alter
the falls would be "to create, on a grand scale, an artificial waterfall in a
formal park. It would interfere with the geologic process and would be con-
trary to the recent emphasis on environmental values."37 The commission
also recommended that guidelines be set to prevent the "intrusion of . . . towers . . . and commercial features whose appearance on the skyline will result in an artificial encirclement that will overshadow and stifle the magnificence of the Falls."38 By the 1970s it was not just Niagara Falls but Olmsted’s plan that seemed worthy of preservation.39

In some ways, the three sets of recommendations are remarkably similar. All emphasize the falls' visual appearance, referring to Niagara as a "spectacle," and all advocate a frame of "natural" scenery. In his report Olmsted carefully explained his ideas about the value of natural scenery and its benefits to health, but the later reports take this value as self-evident, leaving their own assumptions unexamined. Why is the "natural" frame preferred to the urban in 1929 and the 1970s? Note the perjorative implications of the words "artifical" and "formal," as opposed to "natural" scenery in the 1975 report. Why must the city be screened from view? Frank Lloyd Wright's Fallingwater, one of the most powerful architectural images of the twentieth century, gains its appeal from the juxtaposition of building and waterfall. Why not Niagara? There is evident in 1974 a fear that this would diminish the falls, "overshadow" and "stifle" their "magnificence."

The three groups differ in whether they propose to manipulate the falls as opposed to the frame. Olmsted dismissed the idea that the falls themselves could be altered; the 1920s board felt that the water flow above the falls could and should be shaped to magnify the spectacle; the 1970s commission acknowledged that the falls could be manipulated (and its board's had done so), but recoiled from the act. Olmsted was working during a time when sublime landscapes like those of Niagara and Yosemite were seen as creations of God or nature; they could be framed but not constructed. The board of 1926 was working when projects such as the Grand Coulee Dam were being conceived as a progressive union of nature and culture, an organic machine, a manufactured sublime. By the 1960s people had the failed promise of Grand Coulee and all those other dams in the backs of their minds, along with the connections they represented to the development of the atomic bomb and the excesses of industrial agriculture described in Rachel Carson's Silent Spring.40 There was a sense of guilt over what humans had wrought, as well as a notion that nature (not just the scenery) was fragile and required human protection, that human actions could "emasculate" the falls.41 Still, it is curious that in 1974 the commission deemed it all right to construct the frame, but not the falls; to alter the amount of water flowing over the falls, but not move the rocks.

Niagara Falls is shaped by water flowing, rocks falling, and trees growing, by artists and tourists, by journalists and landscape architects, by engineers and workers who divert the water. Niagara is constructed through processes of nonhuman nature, through water use and treaties, through paintings and postcards, memory and myth. Even the most awesome landscapes are products of both nature and culture, and they change in predictable and unpredictable ways in response to both. Olmsted employed the shaping capacity