

# **Bringing Swimming Back to the Hudson: Current Guidelines and Next-Step Solutions for Opening River and Non-Traditional Bathing Beaches in New York**

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## **1. Introduction**

This report's primary goal is to clarify requirements established by New York State and local Health Departments for permitting new bathing beaches, with a particular focus on permitting beaches in urban rivers, harbors and other open-water sites where water quality has significantly improved in the last half century. Therefore this is meant to capture facilities where swimming is permitted whether they be in rivers or ocean-facing. While the information we provide will be helpful to anyone interested in engaging with the permitting process in New York State, our focus and interest were primarily the Lower Hudson region, given the prominence of waterways in the region and the growing number of cities that have moved to embrace the multiple benefits – for residents' health, but also for tourism and therefore the economy – such “blue spaces” can provide. We expect this report will support parties interested in designing and applying for permits to establish permanent points of access to the waters across New York State for swimming and wading. It is intended to help New York State and local municipalities address current and potentially growing demand for swimming and cooling opportunities

Our report will fill a significant information gap regarding the permitting process for new beaches. The procedures for permitting new bathing beaches included in the sanitary or health codes of New York State and New York City – Subpart 6-2 and Article 167, respectively – are iterative yet not fully transparent. When instructions are provided, as is the case for New York City, they can be unclear and thus somewhat misleading. Both NYS and NYC codes give significant leeway to permitting officials. But these officials are likely to have minimal experience with the process, given how few beaches have been permitted

in the past 20 years. The most recent one in New York City was an ocean beach in Staten Island in 2011; the most recent in the Hudson Valley is a children's river pool established in 2007. Ironically, it was also nearly 20 years ago, in 2005, that the administration of then-Governor George Pataki issued "Swimming in the Hudson River Estuary Feasibility Report on Potential Sites," identifying more than 17 potential beach sites along the Hudson River. A detailed analysis of the conditions that have resulted in these missed opportunities is beyond the scope of this report. Instead, we aim to guide communities and organizations advocating for increasing primary contact opportunities for the urban waterways of New York City, along the Hudson River and in other waterways in New York State. We also want to raise awareness about advocates' obstacles and potential strategies to address them.

The report is organized into five sections and an appendix. Section 2, "Background," briefly introduces a growing body of research focused on the many benefits – both in terms of general quality of life, mental health, and economic activity– that access to blue spaces provides. It also touches on the 2005 report that proposed potential sites for new beaches. Section 3, "Regulatory Framework," addresses the most critical elements of the current permitting process. It will highlight the similarities and differences between New York State and New York City Health Departments, showcasing implications for permit seekers. Section 4, "The Permit Application Process," summarizes the discrete steps within the process as they are laid out in Subpart 6-2 and Article 167. We also conducted interviews with public health officials in the state Health Department and local health departments in Lower Hudson counties, as well as community advocates who have attempted to establish or reestablish bathing areas, to gain insights into possible differences and experiences. This section includes a chart with the steps required during the submission process. Section 5, "Case Studies and Insights from the Field" summarizes the experiences of several community organizations that have attempted to permit a bathing beach. Section 6, "Summary of Findings," discusses the review of the current regulatory frameworks, with recommendations for facilitating the submission of applications for bathing beaches and permitted swimming opportunities.

## 2. Background

After almost 60 years of community activism that led to some of the first federal and state environmental protection legislation (New York Historical Society, nd.), urban waterways in New York and throughout the United States have seen dramatic improvements in water quality. For the Lower Hudson Valley, improvements in water quality in the New York and New Jersey Harbor Estuary are a welcome success story ([2021 State of the Estuary Report](#)). Short and long term trends for most water quality indicators strongly suggest conditions have been improving over time and recent federal and state commitments to spending on water infrastructure suggest they will continue to do so. Indeed, the most significant factor restricting swimming and the desirability of other on-water recreation is the sporadic – and for a few areas, consistent – bacterial contamination emanating from combined sewage overflow, sewer system leaks, and/or stormwater. Public interest in accessing urban waterfronts and open waters continues to grow, as does the body of research highlighting the health benefits of blue spaces – marine and coastal areas, rivers, and canals (Gascon et al. 2017). The efforts of public officials at both state and local levels to facilitate access to urban waters have lagged far behind this demand – though that too might be beginning to change.

Swimming has been widely acknowledged by health professionals as a safe, cost effective activity that can support people throughout their entire life. Water has unique properties that provide additional benefits for individuals with lower mobility and a wide range of chronic health conditions, including cardiovascular, musculoskeletal and respiratory (Becker 2009). Having positive swimming experiences as a child reduces the likelihood of developing a fear of water later in life (Poulton, Menzies et al. 1999), increasing the chances of engaging in swimming throughout their lifetime and enjoying the associated benefits to overall health and wellbeing the activity provides. Open water swimming has been identified as a particularly cost effective means to increase swimming opportunities and access (McDougall et al 2022; Oliver et al 2022; Wood et al 2023). In a recent Public Outdoor Recreation Survey (2018),<sup>1</sup> 70% of respondents cited swimming as one of their preferred outdoor activities. Significantly, 65% of survey participants between the ages of 65-85 included swimming as one of their preferred activities. Demographic trends suggest that as the aging population outpaces births, activities such as swimming are likely to increase, allowing New Yorkers to recreate on their own terms as they age. Moreover, the demand is outpacing available infrastructure. Of those survey respondents indicating their community was lacking recreation facilities, swimming pools/beaches was the most requested recreation need. In some NYS regions, demand is not being met while in others swimming facilities may experience overuse and excessive maintenance needs. Park

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<sup>1</sup> New York State Statewide Comprehensive Outdoor Recreation Plan (2019)

professionals' perceptions did not match those of park users, as the responses of those surveyed did indicate a need for swimming facilities.

Historically, racial and economic inequalities have significantly impacted both participation in and the safety of swimming as an activity. A recent study pointed out that while drowning death rates decreased overall, racial/ethnic disparities persisted during the 21-year period between 1998 and 2019. Moreover, the disparity between Black and White persons increased in recent years (Clemens, Moreland and Lee 2021). A widely cited study sponsored by the USA Swim Foundation found that 79% of children in households that make less than \$50,000 per year have few or no swimming skills. It also found 64% of African-American children, 45% of Hispanic children and 40% of white children have few-to-no swimming skills. Racial disparities in swimming skills and drowning rates have been directly correlated with unequal access to swimming opportunities (Wiltse 2014). Waterfront revitalization projects have significantly improved access to urban waterways, further highlighting the importance of improving water quality in recreational spaces. Unfortunately, despite their potential to increase interaction between differently situated residents,<sup>2</sup> the adverse effects of waterfront revitalization schemes, such as gentrification and concomitant displacement have been felt disproportionately by the disadvantaged communities which occupied these areas prior to their renewal. Moreover, these renewal schemes have often taken a “look but not touch” approach, where direct access to the water is not built into the overall plans. Making increased access to natural or open water swimming an integral part of waterfront renewal activities is a cost effective means to positively impact public health outcomes and mitigate historic inequalities.

Climate change mitigation is another important factor underpinning the need for increased public access to urban waterways. As summers heat up, demand for places for the public to cool off also continues to grow. Data for New York City suggest that by 2080, the number of days with a heat index exceeding 95 degrees is projected to increase from a baseline of 6 to between 31 and 82.<sup>3</sup> Underutilized urban waterways can reduce heat effects while simultaneously increasing opportunities for physical activity of city residents. Moreover, as increased water level and shoreline erosion threaten the viability of some currently available sites, aggressive action is needed to shore up the existing sites and their required infrastructure while securing additional opportunities for access. All in all, the intentional development of urban waterways and their surrounding areas to encourage equity, facilitate active lifestyles and help alleviate some of the most important

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<sup>2</sup> *Urban Waterways in Global Cities Forum Report*. Chicago Council on Global Affairs, the City of Chicago, the City of Paris, and World Business Chicago. 2017; 22

<sup>3</sup> NYS Climate Impacts Assessment

[https://nysclimateimpacts.org/wp-content/uploads/2023/09/Appendix-Projections\\_Tables.pdf](https://nysclimateimpacts.org/wp-content/uploads/2023/09/Appendix-Projections_Tables.pdf)

health and climate challenges facing cities today must be considered a necessary investment in the resilience of waterfront communities .

There have been moments when public officials were much more willing to contemplate expanding access to the Hudson River and other area waterways. In 2004, then Governor George Pataki put forth the goal of making the Hudson River swimmable from its source in the Adirondacks to New York City by the end of that decade. Following this vision, the Hudson River Estuary Program of the New York State Department of Environmental Conservation published a report identifying feasible sites for public swimming along the Hudson River from Troy to Manhattan in 2005. The report identified 17 potential sites for new beaches, ranging from those needing little or no improvements to those requiring significant investment and research. In locations where beaches are not physically possible, the study also examined opportunities to create alternative swimming facilities, such as floating pools. While the findings were based on preliminary analysis, they demonstrate how, at that time, there was strong leadership focused on taking advantage of water quality improvements in order to tap these underutilized resources. However, little was accomplished in the years since the report was published to increase permitted swimming access along the Hudson. Nevertheless, during that same time period, community interest in expanding access for public swimming access has apparently increased.

In the same timeframe, public officials have championed expanding access for surface water sports such as kayaking. These sports are often perceived as requiring less direct contact with ambient water as well as affording less risk of ingestion, and therefore, more suitable for waters that are classified as “secondary” or “non-primary” contact (EPA 2022). The NYS DEC classifies secondary contact in 6 CRR-NY 700.1 NY-CRR as “recreational activities where contact with the water is minimal and where ingestion of the water is not probable. Secondary contact recreation includes, but is not limited to, fishing and boating. However, a recent systematic review and meta-analysis (Russo et al. 2020) has suggested that sports-related contact with ambient water during high water flows or in turbulent conditions can incur similar or even higher illness risk when compared to swimming and other activities classified as “full immersion.”<sup>4</sup> Tens of thousands of recreational users every year are engaged in activities that can have similar or greater water immersion experiences compared to contact occurring at bathing beaches. Open water swim events take place in these same waters, without nearly as much scrutiny. Paddle boarders commonly experience full-body immersion. Similarly, boat ownership gives people access to swimming in the same waters where shoreline-based

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<sup>4</sup> However, rafting, canoeing, or kayaking in relatively calm conditions are likely to result in a lower exposure compared to those same activities during high water flows or in turbulent conditions.

access is denied. The demographics associated with these different forms of contact also raise concerns.<sup>5</sup>

Some researchers have pointed out that part of the reticence of public health officials to advocate more forcefully for primary contact opportunities might be related to how, historically, public health research has emphasized the dangers of contact with urban open waters, such as chemical and biological contamination, and the physical threat posed by drownings (Evers and Phoenix 2022). A review of the beach monitoring data in New York City suggests that such a mindset not only favors the status quo but also can lead to significant inconsistencies in the application of public policy. Between 2018 and 2022, permits for existing bathing beaches which were regularly found to violate the city's health code water quality requirements were nevertheless consistently renewed. In some instances, the sites failed the water quality tests almost fifty percent of the time.<sup>6</sup> While the reasons for granting these permits might be complex and ultimately sound, they are yet another example of health officials' reticence to engage in a thorough and serious examination of current regulatory frameworks. Furthermore, it is crucial to acknowledge how such decisions help entrench inequities of access to blue and green spaces. If guidelines allow for beaches to be open much of the time, but closed when conditions aren't suitable, it shows that access can be successfully expanded to many urban communities proximate to many other waters, with or without additional water quality improvements. Of course, continued water quality improvements should always remain a goal, as they will give people more hours and days of crucial access.

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<sup>5</sup> A recent nationwide survey (Outdoor Foundation 2019) indicated that roughly 80% of people participating in surface water sports are white, though the numbers of African Americans and Hispanics participating are increasing.

<sup>6</sup> Based on a review of annual reports from the *New York City Beach Surveillance and Monitoring Program* from 2018 to 2022.

### 3. Regulatory Framework

The regulatory framework for bathing beaches in New York State is laid out in SubPart 6-2 of the New York State Sanitary Code, last updated in 2011. The New York State Department of Health delegates the permitting of beaches and enforcing the regulatory provisions of the State Sanitary Code to each county with a full-service health department. We contacted and spoke directly with health departments in 8 counties in the lower Hudson Valley region with direct access to the Hudson River. All counties we contacted indicated they abide by Subpart 6-2 provisions, and their health codes reference compliance with state regulations, highlighting the need to obtain annual permits and the fees such permits will create. Only New York City had created alternative provisions more restrictive than those established by the State's Sanitary Code within Article 167 of the New York City Health Code.

#### 3.1. Definitions

Some differences emerge in defining what constitutes a “beach” and “bathing.” While the differences might be slight, it is essential to hew closely to the language used in the code when conversing with health officials.

##### 3.1.1. Beach

New York State. The state defines a beach as a section of a body of fresh or salt water used for bathing with the “expressed or implied permission or consent” of the owner or lessee, as well as the surrounding lands and the built environment created to facilitate their use. All such beaches must be permitted, except private residences and condominiums. Summer camps are regulated under a different section of the code.

New York City. The definition included in the city's health code agrees with the state's health code, though it is slightly more restrictive. While private residences do not require permits, there are no exceptions for cooperatives or condominiums under the city's code. To qualify as a beach, any waterfront area must be “associated with” bathing facilities – buildings, equipment, lavatories, toilets, and showers or dressing facilities containing toilets and showers, if any, and the land areas used in connection therewith. Only waterfront areas located in lands under state or federal jurisdictions – in other words, outside the city's jurisdiction – are exempt from compliance with the City's health code.

Westchester County. Westchester County's Health code distinguishes between “bathing area” and “beach.” *Beach* refers to a natural feature of the landscape, such as the shore and the lands contiguous thereto of any sound, bay, lake, pond, river,

stream, or other body of water within or abutting any park or reservation, regardless of their designation as a bathing area.

### **3.1.2. Bathing**

New York State. SubPart 6-2 defines bathing as a recreational activity where the body is partially or totally immersed in water. Permits are required for any location that gives express or implied permission to engage in these activities. The examples of bathing listed are swimming, wading, and diving; fishing, scuba diving, and surfboarding are expressly excluded from the definition.

New York City. The most significant difference between the state and city codes is probably the added restriction that bathing beaches cannot be permitted if they are outside the boundary delineated by the New York State's Department of Environmental Conservation (DEC) classification of "primary contact" waters, as stated in 6 NYCRR §700.1 and also, 6 NYCRR Parts 890, 891.

In comparison, New York State's regulations require a site-specific determination of whether a proposed beach meets water quality and other requirements. New York State does not ban the consideration of a beach based on water use classifications created by DEC as part of its establishment of pollution discharge limits for sewage treatment plants and industrial discharges as required by the federal Clean Water Act. DEC's water use classification process reviews many factors, including water quality and current uses, to establish pollution discharge limits for large water bodies. DEC is currently evaluating updates to its water use classification system and has confirmed during public engagement that its water use classification determination should not be used to make a determination of whether a specific location proposed for a beach should be allowed and that this is a determination for local public health agencies to make based on the application of their regulatory requirements.

In addition, the city also includes surfing in its bathing category, whereas the state does not.

Westchester County. *Bathing Area* refers to a location maintained for the use of bathers, including the water area and lands under the water adjacent to and within one thousand (1,000) feet of the location. This definition applies to areas in any lake, pond, or stream, including the Hudson River, as well as the shores of the Long Island Sound.

### **3.1.3. Sanitary Survey**



*New York State.* In subpart 6-2, the term sanitary survey is used to describe an in-depth study and evaluation of the watershed and bathing area of the proposed site to identify existing and potential sources of pollution and safety hazards, including but not limited to soil conditions, underwater topography, water movement, submerged and other hazardous objects, water depth in the diving area; seasonal or anticipated water level variations, and water quality. Subpart 6-2.10 (a)1, further specifies that the purpose of the sanitary survey is to verify that the watershed for the beach water is free of sewage and untreated sewage discharges or that known waste-water discharges or other contamination is determined to not adversely impact water quality or beach use based upon an historical water quality model for rainfall and bacteriological quality.

*New York City.* Article 167 does not define “sanitary survey.” When the term is used in the code, the meaning differs from that provided by the state’s code. It seems to refer instead to routine monitoring of the water surface and shoreline, which are part of daily operational practices. Requirements and tasks associated with the term “sanitary survey” under Subpart 6-2 fall under the “site assessment” category in Article 167.

### **3.1.4 Variance, Waiver, and Modification**

Both New York State and New York City regulations provide for variances or waivers where specific conditions of the regulations cannot be met but compliance with the overall intent of the regulation can be achieved through other means. In practice, given the public health officials' lack of experience with permitting new bathing beaches and their understandable concerns regarding public health risks, seeking these exceptions will likely generate extensive discussions and review before a determination could be issued. While the permit authority for a beach rests with the full-service County/City health department, we expect NYS Health to be consulted for technical advice.

*New York State.* Subpart 6-2 describes a *variance* as a time-limited exception that allows the applicant to comply with the general purposes and spirit of the regulations during a pre-established timetable. A *waiver* can last for the length of the permit and can be granted when it “reasonably appears that the public health will not be endangered by the conditions of the waiver and adequate alternative provisions have been made to protect the safety of the bathers and the public health.” (Subpart 6-2.6(b))

*New York City.* Section §167.13 states, “When the strict application of any provision of this Article presents practical difficulties or unusual or unreasonable

hardships, the Commissioner in a specific instance may modify the application of such provision consistent with the general purpose of this Article and upon such conditions as, in his or her opinion, are necessary to protect the health or safety of bathers. The denial of a request for modification by the Commissioner shall be deemed a final agency determination.”

### **3.2. Engineer’s Report**

This report is one of the cornerstones of the permit review process. Both State and New York City codes are fundamentally similar, with few exceptions. This is unsurprising, given that the city must meet the minimum requirements of the State Sanitary Code or adopt more stringent regulations. The report must be created by an individual or firm licensed to practice in New York State. Licenses can be verified by visiting New York State Office of the Professions, [www.op.nysed.gov/opsearches.htm](http://www.op.nysed.gov/opsearches.htm) For New York City, licenses can be verified by visiting <https://www.nyc.gov/site/buildings/industry/professional-engineers-and-registered-architects-look-up.page>.

It is important to note that bathing facilities – bath houses with changing rooms, restrooms, first aid rooms, water fountains, and other similar infrastructure – are a requirement for all bathing beaches. Details relating to size, materials and other aspects of construction can be found in Appendix I, as well as in the regulations themselves, included in Appendix 2 and Appendix 3. All counties evaluated required NYS DOH Form 2435, Engineering Report for Bathing Beaches, be submitted as part of the report.

New York State. Subparts 6-2, sections 8-13, and 19 of New York State Health Sanitary Code detail the design requirements for beaches and associated structures. The report must be drafted and approved by engineers licensed to practice in New York State. Minimum requirements are set for bathing sites regarding water and land surface areas, as well as the materials to create a bathing beach floor, necessary water flows and exchanges, markers and other use boundaries, permitted activities, and the infrastructure required for their safe practice. Bathing facilities and other structures associated with the bathing beach, such as bathhouses and first aid rooms, are also regulated. Specifications for types of materials, types of fixtures and their number, necessary ventilation, and other factors are detailed. The regulation also states that additional information might be required.

Health codes for all counties outside New York City included in this survey referenced the state standards. Health department personnel indicated that they would work closely with the state health department and defer to their assessments regarding compliance.

New York City. Regulations for new construction and proposed bathing beaches are detailed in §167.07, which, as we stated earlier, hews very closely to New York State's regulations. Further specifications are contained in sections §167.37 and §167.39.

Section §167.07 gives specific directions on how the information in the report should be organized. First, it requires a detailed narrative of the scope of the work proposed. It also requires three identical sets of engineering plans with the seal and signature of an engineer or architect licensed by the State of New York that state the proposed layout and dimensions of the bathing beach and bathhouses, along with adjacent transportation, sanitary, communication, and energy infrastructures. The specifications for all construction should be included in a separate document.

The city's code also makes more explicit its right to require additional information beyond that specified in the article as part of the permit-granting process. Section §167.07b states that the department can require "any supplemental information it deems necessary." No details are provided about the kinds of information that might be required, the sources where this information can be obtained, or the types of situations in which supplemental information might be required.

Differences are detailed below in Appendix 1.

### **3.3. Sanitary Survey Report**

An equally crucial part of the application process is the Sanitary Survey Report. This information allows the state to determine whether the bathing site and the surrounding watershed present any significant health dangers to the public when used for recreational bathing. Its purpose is to both inventory and evaluate overall water quality and potential sources of pollution and other hazards such as soil conditions, underwater topography, water movement, submerged and other hazardous objects, water depths, and seasonal or anticipated water level variations.

In addition to this periodic inventory, there are also requirements for more routine assessments that must be performed daily. These include visual observation of hazards, physical, chemical, and biological conditions, and water quality sampling for pH and bacteriological conditions. The latter must be determined by a laboratory certified by the state for water analysis.

New York State and Lower Hudson Counties. Subpart 6-2.19.3 provides great detail about the required elements, including a map of the watershed along with details of

potential sources of pollution; a plot map of the location; water level, topographical and weather-related impacts; and water quality standards and history. The health codes we reviewed for counties outside New York City generally reference Subpart 6-2 compliance.

New York City. Article 167 includes similar requirements under the “Site Assessment” category, contained in section §167.07c-1. The term “sanitary survey” does appear in the code, but it refers to the more routine water and shoreline quality monitoring that combines visual inspections with water quality sampling. The requirements for this routine type of monitoring are enumerated in section §167.25.

It should be noted that the New York City’s Department of Health’s guidance for submitting applications, [Instructions for Applying for a Bathing Beach Permit from the NYC Health Department](#), directs applicants to submit a Sanitary Survey following the requirements set by New York State Sanitary Code. However, It is unclear why the specific sections of the code cited are relevant. Specifically, Section 6-1.29, 3.0 refers to patron use in swimming pools. This is likely an error, and the instructions were meant to reference Subpart 6-2.19.3, where the requirements for the Sanitary Survey are listed. It is also unclear whether this sanitary survey would be in addition to the site assessment required under §167.07c-1 or in place of it.

### **3.4. Safety Plans and Provisions**

Permit applicants must also present safety plans that meet requirements for supervisory personnel, equipment, facilities, and other infrastructure. The categories and requirements for supervisory personnel are the same for city and state, listing age, training, and minimum numbers for each category depending on bathing beach characteristics. In both codes, safety plans must include procedures that beach personnel are expected to follow during normal operations and in emergencies, including protocols for bather supervision, coverage, and surveillance; providing first aid and requesting additional help; reporting incidents and injuries; listing all personnel, their responsibilities and organization; a list of emergency telephone numbers; location of first aid and rescue equipment; along with any other information or evidence the Department may require. The Department must approve safety plans in writing before implementation. They must be kept at the beach facility at all times and be presented for inspection upon request.

The form NYSDOH 4473 Bathing Beach Safety Plan must accompany the safety plans. Form NYSDOH 2286, *Swimming Pool & Bathing Beach Safety Plan Checklist* can be used to confirm that all required elements have been submitted.

#### **4. Permit Application Process for New Bathing Beaches**

This section aims to visualize the permit approval process for new beaches, as laid out in the New York State Sanitary and New York City Health Codes. We limit ourselves to the process as it is laid out in the codes, given that the health department personnel we contacted had, by and large, never engaged with new permit applicants.

Our goal in this section is to better understand the various types of information required, their relationship to each other, and at which moment the information will be needed. While the process for permit renewal might be similar, the information discussed in this section is focused explicitly on obtaining new permits.

The permitting process is fundamentally iterative at the state and county levels. This allows health officials to provide guidance and support during permitting. In practice, given that regulations give broad discretionary powers to health officials who currently lack experience permitting new sites and who might be understandably hesitant due to the absence of data about such projects in New York State, the iterative nature of the process can lead to drawn-out negotiations between applicants and county health departments. The costs of such protracted negotiations for community groups are by no means negligible, and neither are the administrative burdens that come from multiple reviews. It might benefit all parties if the process was made more explicit through accompanying guidelines and instructions and a careful review of the process to increase its transparency and efficiency.

##### **4.1 Subpart 6-2 Permitting Process**

Consultation with county health officials is required as part of the process, as stated in Subpart 6-2.19.2.1. While the regulation clearly states that documents for final review “shall contain sufficient information to demonstrate to the permit-issuing official that the proposed bathing beach, or improvements to it, will meet the design standards specified in this section,” there is no guidance for what preliminary documents should contain, what level of review they will receive, how much feedback to expect, and how closely the applicant must hew to the feedback received.

Subpart 6-2 does not make reference to seeking input from any other government officials before beginning preliminary discussions. In practice conversations with local government officials are an unavoidable part of the process if the site is in public land. Our interviews with individuals and organizations that have engaged in the permitting process suggest that this crucial step can be one of the most difficult to navigate. This is partly because there might be multiple layers of local government involved. Villages

form part of towns and cities that are organized into counties. While legally villages have less authority than towns, in practice village governments can have significant influence on the decision-making process. Indeed, interviews suggest that even when county health officials are sympathetic or encouraging, opposition from villages and towns can result in extended delays and complications.

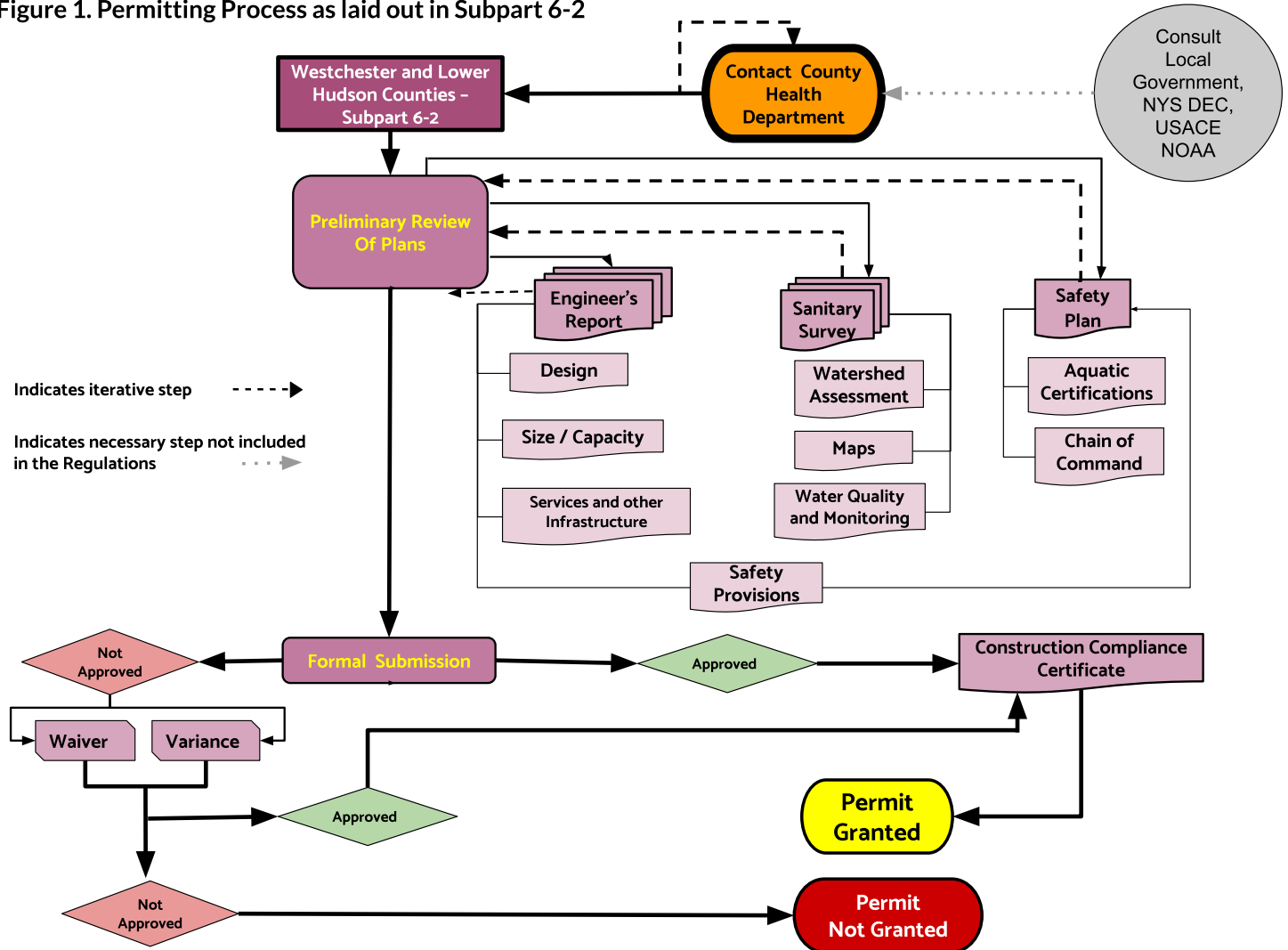
Therefore, as shown in Figure 1., our process assumes multiple conversations with county health officials but also with local government representatives before any plans are created and submitted. Applicants should clearly understand local and county officials' perspectives on the application process and incorporate this perspective into their plans as much as feasible. Based on our interpretation of the regulation, the preliminary application should contain all the information required for the final permit application; the review will most likely involve requests for additional information that was not detailed in the regulations but that county health officials deem necessary to understand the public health risks associated with the new site. Appendix I summarizes the most salient aspects of the regulation and the sections in which they are found. Appendix II contains the full text of Subpart 6-2.

The regulations should clearly state who decides when the final submission process begins and whether additional information can be required. Subpart 6-2 states that documents must be submitted at least 30 days before the beach is scheduled to open. We have assumed that once the application is formally submitted, the permitting officials will determine whether to approve or reject the permit application without further input from the applicant within that time frame. If the application is denied, the applicant can then pursue a waiver or a variance, though the time frame for this process is not included in the current regulation. Regulations do not outline an appeal process if a waiver or variance is denied, so we assume the decision is final.

If the permit is approved, with or without waivers and variances, the county will require a certificate of compliance that asserts all design, sanitary, and safety requirements laid out in the regulations have been met. This certificate must include the signature and seal of an engineer or architect licensed by New York State. Once the certificate is approved, the permit will be issued.

You will find Figure 1 on the following page.

Figure 1. Permitting Process as laid out in Subpart 6-2



## 4.2 Article 167 Permitting Process

While the New York City health code does not require applicants to consult with health department officials before submitting a permit application for a new bathing beach, the *Instructions for Applying for a Bathing Beach Permit from the NYC Health Department* makes it clear that applicants should contact a official within the Health Department's Office of Public Health Engineering. This document is in PDF format and can be accessed by navigating to the permits page of the New York City Department of Health's website, which links to the citywide online permit application system. following several links, reaching the online application page. The document includes a phone number and several links that are not operational. Applicants instead can reach out to the NYC Health

Department through the city's 311 number. Updated links to useful resources can be accessed by scrolling down to the end of the online application's landing page.

In addition to Engineering Plans, Article 167 has specific “pre-qualification” requirements for permit applications for new bathing beaches. The cornerstone of these is a “site assessment,” which is essentially identical to the sanitary survey required in Subpart 6-2,<sup>7</sup> as well as information on water boundaries, bottom slopes and materials (bathymetry), maximum number of users and location of emergency services. Regulations also state that supplemental materials can be requested.

Extensive conversations and negotiations should be expected as part of this process. Once again, when these conversations end and the formal review process begins is not entirely clear. The online application page gives a deadline of November 31st for permits intended for the following summer. If a permit is denied, the regulations allow the applicant to request a modification. Only when the application is approved, with or without modification, does the applicant need to submit a safety plan along with aquatic supervisory certificates. Once all construction is complete, the applicant is required to submit a certificate of construction compliance, and undergo a successful inspection. The last step is securing a certificate of occupancy from the New York City Buildings Department. At that stage, the permit should be issued.

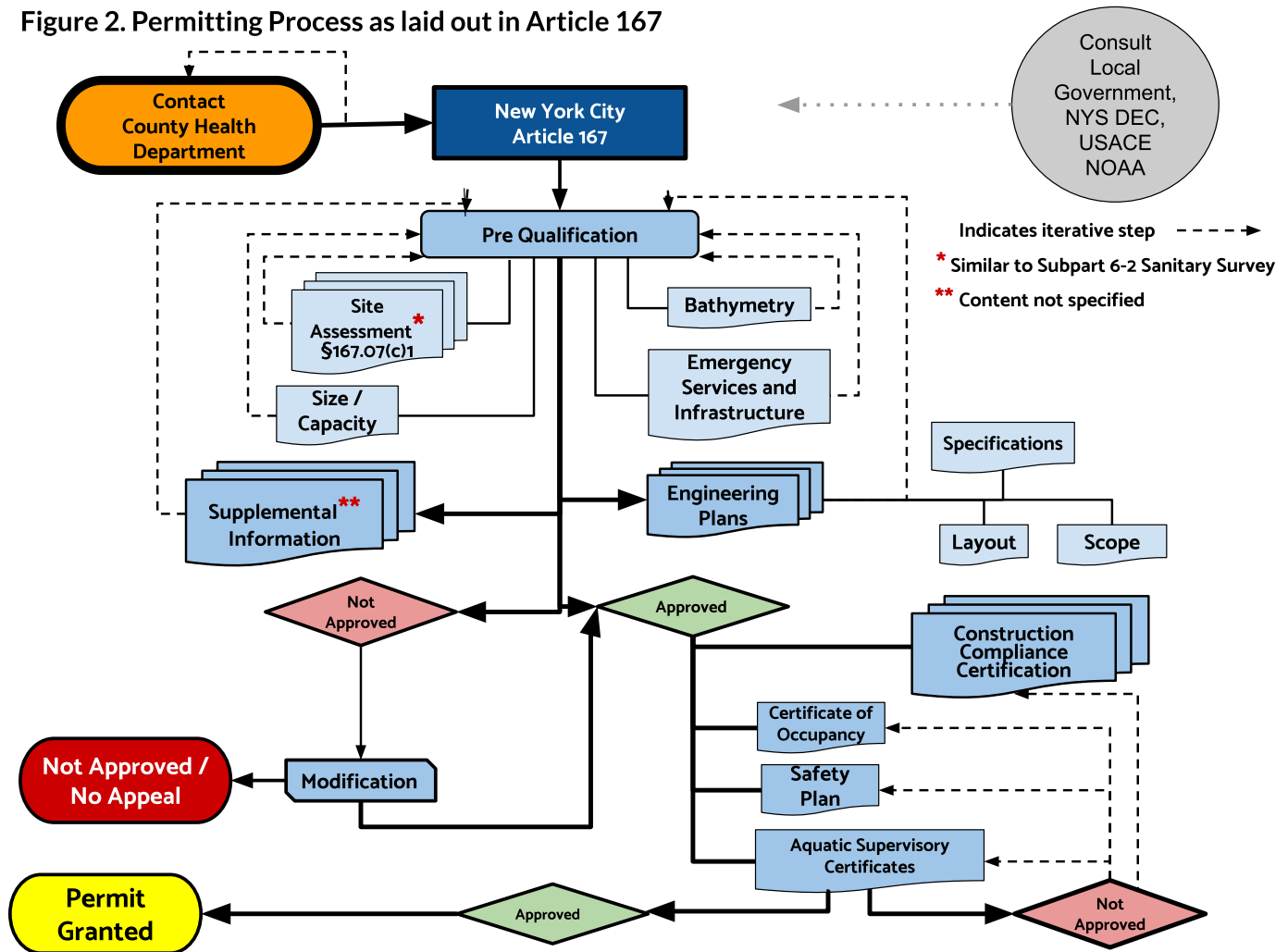
We lay out a diagram of the application process in Figure 2, which you will find below.

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<sup>7</sup> As we discussed earlier, the “Instructions...” uses the term sanitary survey instead of site assessment.



Figure 2. Permitting Process as laid out in Article 167



## 5. Case Studies and Insights from the Field<sup>8</sup>

### 5.1. River Pool at Beacon



Credits: Riverpool.org

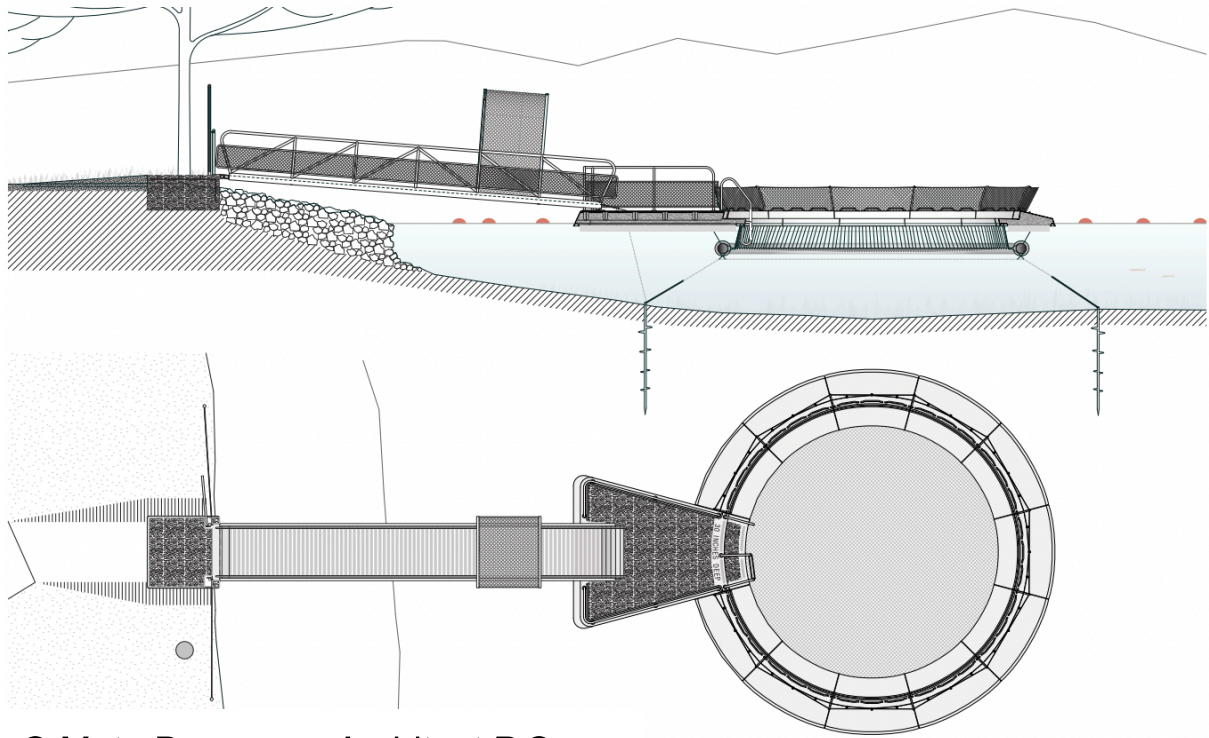
The River Pool is located off the northwest shore of Pete And Toshi Seeger Riverfront Park, in Beacon, NY. The pool is 20 feet in diameter with a netted bottom and colorful floating seats resting on a submerged rigid structural tube all around its perimeter. It is secured to the river floor by elastic ropes (howsers) that allow the pool to rise and fall with the tide so that it maintains a constant depth of 24 to 30 inches. Though too small for swimming, it allows users – primarily children – to cool off while floating or sitting within the structure's confines. It is open from July to Labor Day; during off season, the pool components are stored in sheds in a secure area of the park. Operating costs are covered in part by an annual fundraising event hosted by the not-for-profit organization that built and operates the pool.

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<sup>8</sup> When looking at community based efforts, we did not include the floating pool barge, also known as “The Floating Pool Lady,” because it is a traditional pool that happens to be located in the river. This type of structure does not fall under the purview Subpart 6-2, but rather under 6-1, *Swimming Pools*.

## River Pool - Beacon, NY

Recreation + Environment : Flow-through pool



© Meta Brunzema Architect P.C.

Longitudinal section showing submerged tensile Dyneema floor netting

The design of the current structure took into account a wide range of swimmer safety and environmental concerns. The pool's location was chosen to minimize the impact of river currents, wakes and tides; additional wave attenuation features were included. The netting used allows people to safely walk on the pool floor without contacting the river bottom or vegetation. Vertical pickets under the seats allow water to flow through but prevent users from getting swept under by river currents. The floating seats can roll with the waves as they pass by while staying connected. Certified lifeguards are on duty when the pool is open.

The project benefited from an extraordinary champion – Peter Seeger. A long time environmental activist and advocate for the Hudson River's conservation, Seeger began working sometime around 2000 with a group of supporters to design a swimming structure that would be similar to the floating pools that could be found all along the river at the turn of the 20th Century. For Seeger, providing access to the river was not only a strategy for increasing the public's interest and commitment in the river's well-being, but

also a matter of equity and justice. Seeger, in his writing and interviews,<sup>9</sup> linked the disproportionate number of drownings of African American children to lack of access to pools and lakes, which were often segregated explicitly or implicitly (see Wiltse 2014 ).

The project gained steam after Seeger began collaborating with an architect, Meta Brunzema. Ms. Brunzema brought her own history of river advocacy as a founding member of Friends of Hudson River Park, the organization that spearheaded the creation of Hudson River Park in NYC, and shared Seeger's interest in the turn of the century river pools, including exploring various pool designs that could be implemented.

It is interesting to note that early discussions about the project did not involve the Department of Health. Instead, Seeger reached out to contacts he already had with the NYS Department of Environmental Conservation. Consultations eventually extended to other federal agencies with jurisdiction over the site, including the US Army Corps of Engineers and National Marine Fisheries Service (NOAA Fisheries). Only after securing these agencies approvals for locations and designs were the plans formally submitted to the Department of Health sometime in 2003, and were formally approved in 2006.

The original design was 66 feet in diameter; however, due to concerns from various officials, a smaller prototype was constructed as a compromise. When it opened in 2007, the cost of the project, which benefited from significant amounts of volunteer labor, was estimated to be \$220,000. A full scale design was thought to cost something in the range of \$350,000, which would still have been less expensive than building an in-ground pool (Applebome 2008). Despite having strong, high profile advocates and sympathetic local government officials, budget considerations, regulatory hurdles and lack of cooperation from another not-for-profit with rights to a larger site resulted in the original, larger structure never being built.

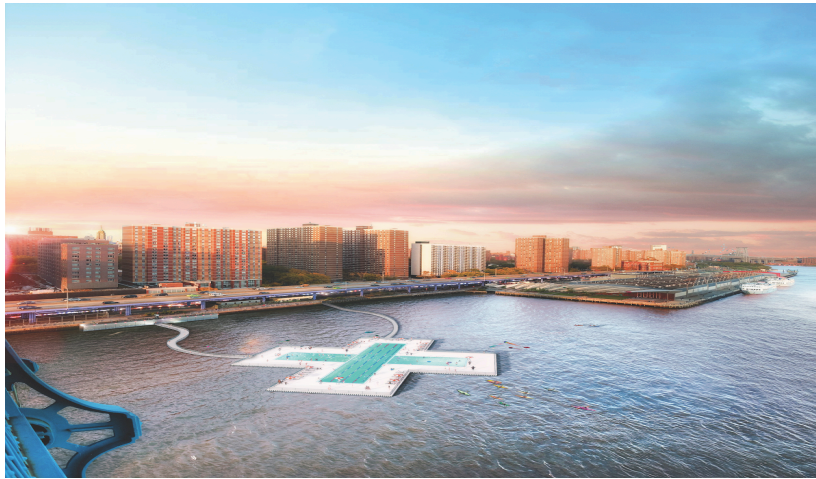
After 15 years of being in operation, the current structure needs repairs and updating. Estimates in 2021 placed the total price for the refurbishing at \$115,000. There are questions about whether the repairs should be attempted, or if a new, updated design would be preferable. Indeed, despite continued support, there are concerns about the River Pools future as a site.

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<sup>9</sup> Conversation with Meta Brunzema



## 5.2. + Pool



The +Pool was introduced in 2010. Taking inspiration from the floating pools that were common around New York City in the early 1900s, it presented a modern vision of providing swimming access in areas where water quality may not meet swimming standards. The + Pool proposes to treat the river water to bathing water quality standards prior to filling the floating pool and then mimic the water turnover found at a beach, eliminating the need for ongoing chemical treatment required for traditional pools to manage pathogen risks introduced by bathers. A Kickstarter campaign was launched in 2011 to support its development. A prototype test of a river water treatment system was developed with this round of Kickstarter funds. A second Kickstarter campaign was started in 2013, and a six-month feasibility test of the treatment system was installed in the East River in 2014. With continued momentum and public support, + Pool became a not-for-profit in 2015.

As a not-for-profit, + Pool had the organizational capacity to begin evaluating potential locations, performing preliminary reviews of 12 locations around New York City, and engaged with New York City Hall to identify a site to open its first location. While the site selection process was underway, + Pool developed community education and swimming programming with local community organizations. One of the first educational programs was building a water quality dashboard for the East River so the public could see when the water met swimmable standards and when the water quality fell below those

requirements. This allowed the organization to collect data to demonstrate that on most days of the swimming season, the water quality was meeting swimming standards. Innovation, at the heart of + Pool, helped it build STEM-focused educational programming in 2017 for middle schoolers on the connections between the river, urban development, and swimming access. In 2018, it sponsored an art installation within the East River shaped like the + Pool that changed its color based on water quality sensors, highlighting the possibilities of swimming in the river and bringing attention to the water quality of the East River.

These multi-pronged efforts to educate elected officials, the city administration, and the public led to the New York City Economic Development Corporation (EDC) issuing a request for expression of interest for providing swimming access to the East River. + Pool was ultimately selected to plan for creating a project demonstrating the ability to create swimming access to the East River.

Now, with NYCEDC identifying a potential site, + Pool began the process of advancing the engineering specifications for the design of a river pool and drafting a permit application that would be submitted to the New York City Department of Health. Several factors complicated discussions on how to move forward with site selected by NYC EDC. For example, the NYC Health Code for beaches, Article 167, did not contemplate a permit application process for a non-traditional bathing beach located along a dense, urban waterfront that would require a submerged structure to accommodate bathers safely.

One of the core conflicts over the location of bathing venues in New York City is the decision of NYC Health, unlike NYS Health, to prohibit any swimming venues in a water body that NYSDEC did not classify for swimming under its discharge program developed pursuant to the requirements of the federal Clean Water Act. As a result, NYC Health summarily rejects any consideration of a bathing facility for large sections of its waterfront.

As we have discussed, NYS DEC's waterbody classification program sets discharge permit limits and is unrelated to whether a specific section of a water body can meet bathing water quality standards or is appropriate for permitted swimming. NYS DEC has said that is water body classification criteria should not be used to determine whether a particular

section of the waterfront is suitable for a beach. NYS Health has also rejected using DEC's water body classification criteria as the basis to prohibit a beach and instead applies a site-specific evaluation of a proposed beach location.

Another core conflict + Pool faced in the Health Code were limitations on where bathing beaches can be located relative to their proximity to pollution discharge points. Many urban waterfronts have storm and wastewater discharge points that may become active during rain events and present temporary hazardous conditions. NYC Health refused to provide any guidance regarding whether it would consider a site-specific evaluation of the water quality risks from these discharge points, what information was needed to make this assessment, or whether + Pool could implement process or engineering controls to eliminate any identified risks for nearby discharge points.

To advance swimming access in New York City, it will be necessary to assess the current restrictions in the New York City Health Code and evaluate under what conditions a waiver or variance could be issued for a non-traditional bathing beach. However, in + Pool's experience, NYC Department of Health was not prepared to evaluate how and where increased swimming access could be supported.

During the early phases of advancing swimming access supported by NYC EDC, the NYC Department of Health informed + Pool that it considered it inappropriate to provide any guidance or direction regarding the criteria the site and its river pool should meet prior to a permit application being submitted. This put the sole responsibility for evaluating complicated public health, engineering, and environmental assessments on a not-for-profit, with no guidance regarding what information would be sufficient to begin to address concerns of the New York City Health Department. After expending considerable resources to advance to the permit application stage, New York City Health then communicated to + Pool that it was inappropriate for the agency to provide any guidance regarding what criteria and standards would need to be met for it to consider approving a waiver or variance to an applicant for a permit.

The NYC Department of Health's rejection of being part of a collaborative policy-making dialogue with advocates for swimming access became a particularly difficult challenge to overcome for + Pool. The NYC Department of Health continued to withhold any guidance

regarding the conditions needed to be met to allow for swimming access along urbanized waterfronts. In contrast, the sitting mayor, Eric Adams, made an official, public commitment to increasing swimming access to the major waterways in the city.

The experience of + Pool is an example of the importance of determining early in the planning process for a new beach or non-traditional beach whether the local agency that needs to permit the facility is interested in working collaboratively to improve access to local waterways. + Pool found that even with a public agency partner and the support of two Mayors, and advancing a project that aligned with the stated policy goals of the City of New York, New York City Health was able to reject and or stall efforts to engage in a collaborative dialogue on how to improve swimming access to the waters around the City for years.

In comparison, the River Pool at Beacon had a local public health department champion who worked collaboratively with the designers to provide safe, free swimming access for the local community.

### **5.3. Louis L. Engle, Jr. Park in Ossining (Westchester County)**



Louis H. Engel Jr. Park is a Town of Ossining Park located within in the Village of Ossining, NY. The park has a small crescent-shaped beach at its southern end, which served as a



public beach for decades until the mid-20th century. The Village of Ossining is part of the Town of Ossining, including the Village of Briarcliff Manor. The town and its villages are located in Westchester County. While the Westchester County Department of Health will ultimately be in charge of processing any submitted permits, these overlapping administrative jurisdictions can complicate securing support for a site.

The site was included in the 2005 feasibility report as a potential location for a beach that nevertheless required additional and potentially significant infrastructural investments. Several natural features of the beach were considered favorable. The beach's underwater slope and sand quality were good; it was protected from waves and underwater currents by a peninsula on the south side, and the bay is far enough from mid-channel to negate wake problems. However, the bathing facilities were inadequate, and the size of the beach was considered small. Furthermore, there is a county-owned sewage treatment facility nearby, which was seen as having a likely impact not only on water quality but also due to the odors emanating from the facility. The report states the site was included despite these multiple challenges due to community interest in re-establishing a beach.

When we asked local health department officials about potential locations along the Hudson River being considered as sites for new public beaches, this was the only one mentioned. To gain more information on these efforts, we interviewed Gareth Hougham, president of the Hudson Valley Stream Conservancy and one of the individuals spearheading the efforts.

Dr. Hougham has worked for decades to protect and restore streams and rivers both for their ecological function and for their sustainable enjoyment by humans. He became involved in efforts to reopen the Ossining beach about five years ago. Though historically, the beach had been used by local residents, bathing had been discouraged for the last 70 years or so. Local lore suggested that racial tensions might have played a role in the beach closure shortly after it was integrated. Still, despite the effort to investigate this claim, it could not be confirmed in the local historical record.

Beach proponents received initial support from the town supervisor for Ossining at the time, who provided an initial grant of five thousand dollars to conduct a water quality analysis. Initially, they also secured full cooperation from the management of the sewage treatment plant, which allowed them to enter the plant grounds to take water samples from the final discharge. They established that the sewage outflow was 1,500 feet away from the beach, double the distance of 750 feet required by state regulations. In terms of water quality from the treatment plant, 2 out of 3 samples obtained during random testing in July 2021 met state standards, and 3 out of 5 of those obtained during August, which

had more rain, met state standards—similar ratios, though the sample number is too small for statistical significance.

For the water quality at the beach, the geometric mean and percent days over 130 enterococcus colonies per 100ml sample during July were 19.2 and 7.7%, respectively, which meet state standards for primary contact recreation. In contrast, samples obtained during the rainy month of August resulted in a geometric mean and percent over 130/100ml of 56.8 and 25.8%, respectively, which do not meet state standards. If the two months were taken together, they would still need to pass the standards, though it would be close to doing so. The findings were echoed by long-term monthly monitoring by Riverkeeper and volunteers, including students from Ossining High School.

However, their most important finding was that the sewage outflows from the plant were not the likely culprits for the elevated bacterial counts. They concluded based on patterns they found in the water quality testing results. Given that the sewage treatment outflow is south of the beach, the expectation was that samples taken when the tide was coming into the Hudson River – in other words, flowing north and bringing water that passed by the sewage outflow into the beach area – might have violated established water quality parameters. This was not the case. Instead, most samples that failed to meet required water quality parameters were taken when the water flowed south – when the sewage outflows would have least impacted the beach water. After further investigation, they discovered that what was driving the high bacterial counts was one of the local tributaries, the Sing Sing Kill. The likely culprits were failing residential septic tanks and/or leaks from the sewer collection system, most of which is owned by the Village of Ossining.

Upon sharing their data with the village government, proponents were disappointed to discover that village officials responsible for the sewer collection system were not interested in finding the source of the contamination. Officials expressed concerns that residents would be burdened with repairs for septic tanks. Repairs to leaks in the village sewer line were also considered cost-prohibitive. Government officials seemed to have an underlying belief that not many residents would want to swim in the Hudson River.

Proponents continue to work with village, town, and county officials to try to find solutions to the water quality issues created by Sing Sing Kill but understand their options as non-governmental advocates are limited without collaboration from municipal officials.

#### 5.4. Kingsland Point in Sleepy Hollow, NY (Westchester County)



Kingsland Point in Sleepy Hollow, NY is included in the 2005 report as a “feasible site.” The site, previously very popular, was closed to the public in 1974. The report describes the site as a “beautiful 900 foot crescent beach facing the northwest” with excellent sand quality. It further suggests that the bathhouse, described as “extensive” though in disrepair, might be “eligible for consideration by the National Register of Historic Buildings by the State’s Historic Preservation Officer.” (2005: 50) The Building has been restored. Currently the building is used for community events, as well as a boat house and stores kayaks and canoes.

The most recent interest in re-opening the site comes from residents who are in the very early stages of advocacy. The group, still very informal, shares the belief that Sleepy Hollow residents have very limited access to swimming venues. Most villages in this area have a local public swimming access available for a few hundred dollars/resident families. Sleepy Hollow is unique because it does not have public swimming access. Many village residents live in multi-family dwellings, including a large hispanic community. According to

the 2022 US Census report, the town has 11,000 residents, 7.5% of whom are living in poverty. There is a large population of Latino residents who live in multi-family dwellings with no access to backyard pools; the nearest beach is private, accessible only to residents of a neighborhood. The nearest public pool, also requiring membership, is in Mount Pleasant. It is only open to residents of residents of the Village of Pleasantville, the Village of Sleepy Hollow, and the Mount Pleasant portion of the Village of Briarcliff Manor. Village residents pay a higher pool pass rate since they are not subject to Mount Pleasant recreational taxes. Mount Pleasant is 20 minutes by car but an hour and 20 minutes by public transportation for Sleepy Hollow residents. Private clubs in the area require member references, have wait lists, and higher fees. With newer developments being built, the town would greatly benefit from having its own beach that residents could easily access.

A concern about the Kingsland Point location is the impact of high tide, when the water covers the beach in its entirety. The 2005 report discusses the importance of adding sand not only to preserve the beach but also to protect the sea wall itself, which recently was rebuilt after suffering significant deterioration over the years. Residents have begun to consider whether a floating pool would work better at the site, as it could potentially solve the problems with high tide. In addition to the Kingsland Point location, the village might also be considering other locations that provide river access.

## **6. Findings and Recommendations**

### **A. Improving the Current Application Submission Process**

Given how few beaches are ever proposed in New York State, it is not surprising the bathing beach regulations and permit application process need to be more streamlined to support community organizations and small municipalities. The current process for applying for a bathing beach permit is iterative. As this report makes clear, there are multiple stages at which the project scope and the kinds of information that need to be submitted can shift based on inquiries from the local health department. This results in complicated and lengthy permit processes that can stretch for several years. Current estimates suggest that the minimum amount of time needed is two years. Beacon River Pool, the only non-traditional beach permitted in New York State, took over seven years to complete the permitting process.

To help streamline this process both for the regulator, who is likely seeing a bathing beach permit for the first time, and the permittee, an essential first step should be creating guidelines written in language accessible to laypeople and highlighted on public-facing websites. These guidelines would help interested parties navigate the regulatory

requirements to determine what type of information is required and the appropriate organization to support an efficient review. Providing tools with visual examples and diagrams would also benefit the department, resulting in higher-quality submissions facilitating the review process. Additional decision-making tools help local stakeholders decide which locations will advance through the permit approval before engaging with higher-cost engineering and other professional services.

Improved guidance documents would help private and public stakeholders assess the opportunities siting new beaches, and support their submissions of permit applications. We suggest that the state create a pre-permit application guide that can be shared with local health departments. The guide should be designed to walk applicants through kinds of site assessment, water quality, and operational data that will be needed to successfully submit a permit application. This guide would also support the applicant in deciding whether to pursue traditional or non-traditional beach based on a checklist assessment of the site being considered. Finally, the guide should include a list of actions that may be required to demonstrate the beach meets the intent of the health code and is eligible for a waiver.

New York State does not seem to have readily accessible instructions for permit applications. While New York City has created a public-facing set of instructions, they need to match the requirements set forth by their bathing beach regulations. Working to create the guidelines and tools we have suggested would be an essential first step and a relatively easy gap for health agencies to address.

## **B. Updating the Health Code to Explicitly Consider Non-Traditional Beaches**

The community, public health, environmental, environmental justice, and economic benefits of blue spaces are widely understood. The State's own recreational demand surveys have indicated public demand for creating additional opportunities for swimming, demand that is likely to increase given the increasing number of heat waves. However, New York State's public health agencies have not actively explored how their health codes and permit processes could be updated to support safe, reliable access to thousands of miles of waterfronts. For example, the current health code does not contemplate what we term "non-traditional" beaches could be located along urban waterfronts. Non-traditional beaches are along waterfronts that do not conform to the design and aesthetics of a traditional sandy bottom beach with gently sloping entries and generally located along undeveloped areas with large upland spaces. Non-traditional beaches generally are providing access to water bodies that have historically become disconnected from the local community through intense development. Access to the water often requires the use

of walkways or stairs to reach the water and submerged structures to bound where swimming occurs and with flooring to create uniform water depths.

Health agencies have yet to consider what types of processes and engineering controls could be implemented to allow routine swimming access in water influenced by urban development. For example, the health codes in New York State do not define what monitoring and sampling requirements are needed to evaluate water quality parameters in waterways that can be impacted by episodic events that reduce water quality below primary contact standards. Similarly, guidance from public agencies regarding what needs to be captured in sanitary surveys for beaches located in dense urban communities and determine if a potential sources of pollution warrants a detailed risk assessment or mitigation. Non-traditional bathing beaches in dense urban areas will have upland constraints not contemplated in the design requirements established for traditional sandy beaches. Public agencies need to define the operational and bather safety expectations that would apply to non-traditional beaches. Without careful consideration by health agencies providing guidance and decision-making frameworks, it is difficult for a public or private proposal to navigate the permit application process successfully.

In New York City alone, 2.9 million people live within ½ mile along 520 miles of coastline, and yet access to safe, sanctioned swimming options are scant, especially many for Black, Indigenous, People of Color (BIPOC) and low-wealth communities. Despite improving water quality and the call from many stakeholders to increase opportunities to swim along thousands of miles of waterfront, New York State has yet to make significant progress.

Nearly 20 years after a state-commissioned review of possible locations for bathing beaches and floating pools along the Hudson River, not one identified location was created despite clear demand. The most recent Hudson River bathing site to open was the River Pool at Beacon in 2007, which is a version of a floating pool sized for children. At the time, it was expected to serve as a prototype for other bathing sites along the river. No other floating pools have since been created in New York. The last new ocean beach beach permitted in NYC was in 2011.

While many factors – such as management requirements and operational costs, among others – discourage progress, the current regulatory frameworks are likely a barrier to the public or private sector from establishing a non-traditional beach. The kinds of locations and the engineering requirements in the bathing beach regulations limit the possibilities for swimming along urban waterfronts. Health agencies must contemplate creating alternatives to traditional beaches, such as harbor/river pools and the floating pools once

typical across New York and serving millions of swimmers each summer to meet the calls to improve access to the thousands of miles of waterfront.

**C. Convening an international panel of experts to discuss possible protocols and parameters for promoting urban open-water swimming.**

Health agencies in New York State need to proactively consider how improvements in water quality could allow bathing access in areas that 20 years ago may not have been considered viable. This reconsideration should be informed by a growing global movement to increase access to open-water swimming opportunities in locations historically impacted by urbanization as water quality has dramatically improved.

A proactive reconsideration of traditional biases of health agencies towards swimming in bodies of water influenced by urban development (Evers and Phoenix 2022) needs to include a broad range of technical, environmental, public health, and community stakeholders to guide and inform the assessment process. For this reason, we propose the convening of an international panel of experts that would bring their diverse set of knowledge and skill sets to bear on new guidelines that facilitate site-specific assessments for proposed swimming areas, as well as existing and potential technical and engineering solutions.

**D. Support the Creation of Non-Traditional Beaches**

Working in collaboration with local community stakeholders, the New York State Department of Health should develop clear guidance for how to approach the evaluation of the suitability of sites being considered for a non-traditional bathing beach, the water quality and engineering design criteria needed to advance through the permitting process, and the organization of bather supervision. Working from this guidance, the public sector should pursue the creation of several non-traditional beaches in New York City and the lower Hudson River Counties with a focus locations that would serve BIPOC and low-wealth communities that have been long separated from swimming access opportunities. For example, New York State should provide clear guidance for how to assess the water quality and public health risks associated with identifying potential points of pollution discharges during the required Sanitary Survey. Through this collaborative process, the State will be able to establish models for how to evaluate locations for non-traditional beaches, the basis for making waiver or variance determinations from the existing State Sanitary Code, and issuing a permit approval decision.

#### **E. Update the 2005 Beach Feasibility Study and Opportunities for Non-Traditional Beaches**

In collaboration with the New York State Department of Health, NYS DEC should update its 2005 beach feasibility study to include non-traditional beach sites, locations in New York City, careful consideration of swimming access in environmental justice, BIPOC and low-wealth communities and the role that beaches can play in helping mitigate climate change risks. For example, accessing swimming venues offers one way to mitigate the impacts of heat stress from rising temperatures. This study would support local stakeholders identification of potential bathing locations that meet minimum requirements established by New York State Health and building consensus around which sites should be pursued as possible bathing locations.



## References

Applebome, P. (2008) The Pleasure of a Pool on a Cleaner Hudson. *The New York Times*. Retrieved July 21, 2023, from <https://www.nytimes.com/2008/07/13/nyregion/13towns.html>.

Becker B. E. (2009). Aquatic therapy: scientific foundations and clinical rehabilitation applications. *PM & R : the journal of injury, function, and rehabilitation*, 1(9), 859–872. <https://doi.org/10.1016/j.pmrj.2009.05.017>

Brückner, A; Falkenberg, T; Heinzl, C; Kistemann,T. (2022) The Regeneration of Urban Blue Spaces: A Public Health Intervention? Reviewing the Evidence. *Frontiers in Public Health*, Vol.9 <https://www.frontiersin.org/articles/10.3389/fpubh.2021.782101> DOI 10.3389/fpubh.2021.782101 ISSN 2296-2565

Chicago Council on Global Affairs (2017) *Urban Waterways in Global Cities Forum Report*. Chicago Council on Global Affairs, the City of Chicago, the City of Paris, and World Business Chicago. [https://globalaffairs.org/sites/default/files/2021-06/report\\_urban\\_waterways\\_170622.pdf](https://globalaffairs.org/sites/default/files/2021-06/report_urban_waterways_170622.pdf)

Clemens T, Moreland B, Lee R. (2021) Persistent Racial/Ethnic Disparities in Fatal Unintentional Drowning Rates Among Persons Aged ≤29 Years — United States, 1999–2019. *MMWR Morb Mortal Wkly Rep*;70:869–874. DOI: <http://dx.doi.org/10.15585/mmwr.mm7024a1>

Evers, Clifton and Phoenix, Cassandra (2022) Relationships between Recreation and Pollution When Striving for Wellbeing in Blue Spaces *Int. J. Environ. Res. Public Health* 2022, 19(7), 4170; <https://doi.org/10.3390/ijerph19074170>

Gascon, M.; Zijlema, W.; Vert, C.; White, M.P.; Nieuwenhuijsen, J. Outdoor blue spaces, human health, and well-being: A systematic review of quantitative studies. *Int. J. Hyg. Environ. Health* **2017**, 220, 1207–1221

McDougall, Craig; Foley, Ronan; Hanley, Nick; Quilliam, Richard; Oliver, David. (2022). Freshwater Wild Swimming, Health, and Well-Being: Understanding the Importance of Place and Risk. *Sustainability*. 14. 6364. 10.3390/su14106364.

New York City Department of Health. (2009). Article 167 *Bathing Beaches* - [nyc.gov](https://www.nyc.gov/assets/doh/downloads/pdf/about/healthcode/health-code-article167.pdf). <https://www.nyc.gov/assets/doh/downloads/pdf/about/healthcode/health-code-article167.pdf>

New York City Department of Health. (n.d.). *New York City Beach Report 2022*. NYC Health. <https://www.nyc.gov/site/doh/health/health-topics/beach-class.page>

New York City Department of Health. (n.d.). *New York City Beach Report 2021*. NYC Health. <https://www.nyc.gov/site/doh/health/health-topics/beach-class.page>

New York City Department of Health. (n.d.). *New York City Beach Report 2020*. NYC Health. <https://www.nyc.gov/site/doh/health/health-topics/beach-class.page>

New York City Department of Health. (n.d.). *New York City Beach Report 2019*. NYC Health. <https://www.nyc.gov/site/doh/health/health-topics/beach-class.page>

New York City Department of Health. (n.d.). *New York City Beach Report 2018*. NYC Health. [https://a860-gpp.nyc.gov/concern/nyc\\_government\\_publications/ww72bd24g?locale=pt-BR](https://a860-gpp.nyc.gov/concern/nyc_government_publications/ww72bd24g?locale=pt-BR)

New York Historical Society. (n.d.). *Pete Seeger at 100: How the folk legend built a sailboat to help revive the Hudson River*. <https://www.nyhistory.org/blogs/pete-seeger-at-100-clearwater-sailboat-hudson-river>

New York State Department of Environmental Conservation. (2005). *Swimming in the Hudson River Estuary: Feasibility Report on Potential Sites*. [https://www.dec.ny.gov/docs/remediation\\_hudson\\_pdf/swimhudsonfearpt.pdf](https://www.dec.ny.gov/docs/remediation_hudson_pdf/swimhudsonfearpt.pdf)

New York State Department of Health. (2011, July 6). *New York Codes, rules and regulations*. Title: SubPart 6-2 - Bathing Beaches | New York Codes, Rules and Regulations. <https://regs.health.ny.gov/content/subpart-6-2-bathing-beaches>

New York State Department of Parks, Recreation and Historic Preservation (2019) *Statewide Comprehensive Outdoor Recreation Plan 2020-2025: Improving our Visitors' Experience through Inclusivity, Diversity and Resiliency*. <https://parks.ny.gov/documents/inside-our-agency/20202025StatewideComprehensiveOutdoorRecreationPlan.pdf>

Oliver, D. M., McDougall, C. W., Robertson, T., Grant, B., Hanley, N., & Quilliam, R. S. (2023). Self-reported benefits and risks of open water swimming to health, wellbeing and the environment: Cross-sectional evidence from a survey of Scottish swimmers. *PloS one*, 18(8), e0290834. <https://doi.org/10.1371/journal.pone.0290834>

Outdoor Foundation (2019) *Special Report on Paddlesports & Safety*. Last accessed August 31, 2023. [https://americancanoe.org/wp-content/uploads/documents/sei-educational\\_resources/2019\\_special\\_report\\_on\\_paddl.pdf](https://americancanoe.org/wp-content/uploads/documents/sei-educational_resources/2019_special_report_on_paddl.pdf)

Russo, G. S., Eftim, S. E., Goldstone, A. E., Dufour, A. P., Nappier, S. P., & Wade, T. J. (2020). Evaluating health risks associated with exposure to ambient surface waters during recreational activities: A systematic review and meta-analysis. *Water Res*, 176, 115729. doi:10.1016/j.watres.2020.115729

Stinnette et. al. (2018) *The State of The Estuary* 2018. NY/NJ Harbor and Estuary Program and the Hudson River Foundation.

<https://www.hudsonriver.org/NYNJHEPStateoftheEstuary.pdf>

US Environmental Protection Agency. (2022). *An Approach for Applying EPA's 2012 Recreational Water Quality Criteria Recommendation to Non-primary Contact Exposure Scenarios*. U.S. Environmental Protection Agency, White Paper. Office of Science and Technology, Office of Water. Gary Russo, Ph. D., author.

<https://www.epa.gov/system/files/documents/2022-01/rec-criteria-white-paper-final.pdf>

Wiltse, J. (2014). The Black–White Swimming Disparity in America: A Deadly Legacy of Swimming Pool Discrimination. *Journal of Sport and Social Issues*, 38(4), 366-389. <https://doi.org/10.1177/0193723513520553>

Wood, Louisa E. ; Vimercati, Giovanni ; Ferrini, Silvia; Shackleton, Ross T. (2022) Perceptions of ecosystem services and disservices associated with open water swimming, *Journal of Outdoor Recreation and Tourism*, Volume 37, 100491, ISSN 2213-0780, <https://doi.org/10.1016/j.jort.2022.100491>.

2021 Harbor-wide Water Quality Report as well

<https://www.hudsonriver.org/wp-content/uploads/2021/07/WaterQualityReport2021.pdf>

## Appendix 1. Partial Comparison between New York State and New York City Regulations

This appendix is intended to highlight some similarities and differences that exist between the two health codes that regulate beach permitting in the Lower Hudson region. Its focus is on the provisions that would impact permitting for new beaches, rather than the renewal of permits. It is organized to support the understanding of the flow charts included in Section 4, The Permitting Process. The parts of the code referenced and cited are redacted and paraphrased. The full text of Subpart 6-2 and Article 167 are included in Appendix II.

### I. Scope of Regulations:

Category	New York State Subpart 6-2	New York City Article 167
<b>Bathing</b>	<p><b>6-2.2d</b> Recreational</p> <p>Body partially or totally immersed in water</p> <p>Includes swimming, wading, and diving</p> <p>Exclude fishing, scuba diving, and surfboarding.</p>	<p><b>§167.03(d)</b> Recreational</p> <p>Body in direct contact with water to the point of complete submergence.</p> <p>Includes but is not limited to, swimming, diving, water skiing, skin diving, surfing, and wading.</p> <p>Not include if minimal contact and ingestion is not probable, such as fishing and boating.</p>
<b>Beach</b>	<p><b>6-2.2a</b> Bathing place, together with any buildings and appurtenances, and the water and land areas used in connection in addition to that, at a pond, lake, stream or other body of fresh or salt water which is used for bathing or swimming with the express or implied permission or consent of the owner or lessee of the premises or which is operated for a fee or any other consideration or which is openly advertised as a place for bathing or swimming</p>	<p><b>§167.03 e</b> Any waterfront area of the City with associated bathing beach facilities not specifically restricted by the provisions contained in §167.05d, where bathing is permitted regardless of whether it is recommended per the classifications given in §167.17. Bathing beach facilities include but are not limited to, buildings, equipment, lavatories, toilets and showers, or dressing facilities containing toilets and showers, if any, and the land areas used in connection therewith.</p>

<b>Restrictions</b>	<p><b>6-2.10(1)</b> A sanitary survey verifies that the watershed for the beach water is free of sewage and untreated sewage discharges, or that known waste-water discharges or other contamination is determined to not adversely impact water quality or beach use based upon an historical water quality model for rainfall and bacteriological quality.</p>	<p><b>§167.05(d)</b> Site outside of boundary delineated for primary contact recreation as defined by applicable regulations of the New York State Department of Environmental Conservation (see 6 NYCRR §700.1; see also, 6 NYCRR Parts 890, 891).</p>
<b>Exceptions</b>	<p><b>6-2.3</b> Private residences</p> <p><i>If ocean beach outside New York City, Suffolk, and Norfolk counties:</i> Condominium, cooperative, or property association provided such bathing beach is used exclusively by members of the condominium, cooperative apartment project or corporation or association and their family and friends.</p> <p>Summer camps (have their own regulations.)</p>	<p><b>§167.01</b> Not apply to bathing beaches owned and/or maintained by an individual for the use of the individual and/or family and friends wherein no monetary compensation or any other compensation or consideration is exchanged.</p> <p>Not apply to summer camps</p> <p><b>§167.05</b> No permit required for beaches in State or Federal parks</p>

## II. Preliminary Review (Subpart 6-2) and Prequalification (Article 167)

### A. Engineering Plans (to be submitted along with NYSDOH Form 2435, *Engineering Report for Bathing Beaches*)

#### A.1 Preparation

Category	New York State Subpart 6-2	New York City Article 167
Preparation of Plans	<b>6-2.8</b> Prepared by a person licensed by the State of New York to practice engineering or architecture.	<b>§167.07(a)</b> Prepared by a person licensed by the State of New York to practice engineering or architecture.

#### A.2 Design

##### A.2(a) Bathing Area

Category	New York State Subpart 6-2	New York City Article 167
Location.	<b>6-2.19.4.1</b> Suitability established by a sanitary survey.	<b>§167.07(c)</b> Documented in Site Assessment
Bottoms	<b>6-2.19.4.5</b> <i>Slopes:</i> Up to 4' 1:10; deeper, 1:3	<b>§167.37(b)4</b> <i>Slopes:</i> Up to 4' 1:10; deeper, 1:4
	<b>6-2.19.4.6</b> <i>Materials:</i> Up to 6', sand, pea gravel or other similar material.	<b>§167.37(b)5</b> <i>Materials:</i> Up to 6', sand, pea gravel or other similar material.
Water Currents	<b>6-2.19.4.9</b> < 3'/sec	<b>§167.37(b)7</b> < 3'/sec
Area Designations/ Marker Lines	<p><b>6.2.10</b> Float lines to clearly designate the perimeter, the separation of shallow and deep areas, the wading area, the diving area and dropoffs, radical changes in slope or underwater obstructions.</p> <p>Not applicable at beaches located on the shore of Lake Erie, Lake Ontario, Long Island Sound or the Atlantic Ocean, unless required by the permit-issuing official.</p> <p><b>6-2.19.4.7.1</b> Buoys designate the perimeter, the separation of shallow and deep-end areas</p>	<p><b>§167.37(e)</b> Buoys designate the perimeter, the separation of shallow and deep-end areas at three to four feet depth, the diving area, drop offs, and radical changes in slopes or underwater obstructions.</p> <p>Separate wading areas up to 2' deep should be provided.</p> <p>Lines shall have floats at five-foot intervals be securely anchored, and have buoys no more than 25 feet apart and at points where lines are joined.</p>

	<p>at a depth of three to four feet, the diving area, and drop offs, radical changes in slopes or underwater obstructions.</p> <p>Separate wading areas up to 2' deep should be provided. (except Great Lakes or ocean beaches)</p> <p>Lines shall have floats at five-foot intervals be securely anchored, and have buoys no more than 25 feet apart and at points where lines are joined.</p>	
<b>Diving</b>	<p><b>6-2.16(f)</b> <b>6-2.19.4.7.1</b> Depth Markers near diving boards, platforms, and similar facilities.</p> <p>NO DIVING if &lt; 8'</p>	<p><b>§167.37(d)</b> Depth Markers near diving boards, platforms, and similar facilities.</p> <p>NO DIVING if &lt; 8'</p>
	<p><b>6-2.19.4.8</b> Platforms. visible 12-inch airspace under maximum feasible load.</p> <p>No airspace for flotation devices/foam blocks.</p> <p>Underwater construction is limited to adequate support and must prevent entrapment of bathers.</p> <p>Boards. &lt; 3' above the water, 10' depth at the end, and 12' beyond. If &gt; 3', 12' at end and 20' beyond. 10' max height.</p>	<p><b>§167.37(d)</b> Platforms. visible 12-inch airspace under maximum feasible load .</p> <p>Underwater construction is limited to adequate support and must prevent entrapment of bathers.</p>
<b>Overhead clearance</b>	<p><b>6-2.19.4.12</b> No overhead electrical wiring shall pass within 20' horizontally of the bathing beach water line. Compliant with code.</p>	<p><b>§167.37(g)</b> No overhead electrical wiring shall pass within 20' horizontally of the bathing beach water line. Compliant with code.</p>

A.2(b) Bathymetry (NYC only)

<b>Boundaries Tide Lines Mean High Tide</b>	<p>Boundaries discussed in <b>Sanitary Survey</b> No specific requirements for tide lines. See also <b>Bottoms</b></p>	<p><b>§167.07.2</b> Bathing area boundaries; high and low tide lines; depth lines at mean high tide on a 5-foot contour. See also <b>Bottoms</b></p>
	<p>See <b>Sanitary Survey</b></p>	<p><b>§167.37(b)3</b> 35 square feet water surface per bather</p>

### A.2(c) Size and Capacity

Category	New York State Subpart 6-2	New York City Article 167
Area (Size)	<b>6-2.19.4.2-3</b> <u>Total</u> : Minimum an acre. If less than four acres and 100 gallons per bather per day of natural flow-through, dilution is needed.	<b>§167.37(b)4</b> <u>Total</u> : Minimum an acre. If less than four acres and 100 gallons per bather per day of natural flow-through, dilution is needed.
	<b>6-2.19.4.3</b> <u>Per Bather</u> : Minimum of 25 square feet land surface; 75 square feet if over four feet deep.	<b>§167.37(c)</b> <u>Per Bather</u> : Minimum of 25 square feet land surface; 75 square feet if over four feet deep.
Capacity	<b>6-2.19.4.2-4</b> 35 square feet water surface per bather	<b>§167.37(b)3</b> 35 square feet water surface per bather

### A.3 Bathhouse and other Facilities

Category	New York State Subpart 6-2	New York City Article 167
First Aid Room	<b>6-2.19.6.4</b> If accommodating > 500 bathers, readily accessible room or area designated and equipped with at least the following: (1) Running potable water; (2) A cot or bed with blankets and sheets; (3) Advanced first aid supplies at least equivalent to 24 units; and (4) Resuscitation equipment.	<b>§167.21(e)</b> If accommodating > 500 bathers, readily accessible room or area designated and equipped with at least the following: (1) Running potable water; (2) A cot or bed with blankets and sheets; (3) Advanced first aid supplies at least equivalent to 24 units; and (4) Resuscitation equipment.
Toilets	<b>6-2.13(e)</b> Adequate number of facilities, water to code. Provided with soap, paper towels or electrical hand drying units, and covered waste receptacles.  Suitable sanitary napkin receptacles shall be provided in toilet facilities used by females.	<b>§167.37(b)1</b> Adequate number of facilities, water to code. Provided with soap, paper towels or electrical hand drying units, and covered waste receptacles.  <b>§167.39 (b)2</b> Separate for each sex.  Suitable sanitary napkin receptacles shall be provided in toilet facilities used by females.



<b>Floors Walls Partitions</b>	<b>6-2.19.5.2</b> Smooth-finished material with non-slip surfaces, impervious to moisture, cleanable, and sloped at least one-fourth inch per foot to drains. No Carpeting. Junctions between walls and floors shall be covered. Partitions between dressing cubicles terminate at least 10 inches above the floor or shall be placed on continuous raised masonry or concrete bases at least four inches high.	<b>§167.39(a)</b> Smooth-finished material with non-slip surfaces, impervious to moisture, cleanable, and sloped at least one-fourth inch per foot to drains. No Carpeting. Junctions between walls and floors shall be covered. Partitions between dressing cubicles terminate at least 10 inches above the floor or shall be placed on continuous raised masonry or concrete bases at least four inches high.
<b>Lockers</b>	<b>6-2.19.5.2</b> Solid masonry or concrete bases at least four inches high or on legs with the bottom of the locker at least 10 inches above the floor. Vented.	<b>§167.39(a)</b> Solid masonry or concrete bases at least four inches high or on legs with the bottom of the locker at least 10 inches above the floor. Vented.
<b>Showers</b>	<b>6-2.13(d)</b> Water at a temperature of at least 90 degrees Fahrenheit and no more than 110 degrees Fahrenheit at a rate of at least 1.5 gallons per minute per shower head. Thermostatic, tempering or mixing valves shall be kept in good operation to prevent scalding of the bathers.	<b>§167.39(b)3</b> Water at a temperature of at least 90 degrees Fahrenheit and no more than 110 degrees Fahrenheit at a rate of at least 1.5 gallons per minute per shower head. Thermostatic, tempering or mixing valves shall be kept in good operation to prevent scalding of the bathers.
<b>Drinking Fountains</b>	<b>6-2.19.5.5</b> Drinking fountains: every 500' or 1000 users. Slanting jet type with the surrounding guard, non submersible opening. Minimum of 20 psi.	<b>§167.39(c)</b> Drinking fountains: every 500' or 1000 users. Slanting jet type with surrounding guard, non submersible opening. Minimum of 20 psi.
<b>Waste Water</b>	<b>6-2.19.5.6</b> Discharged to a municipal sewerage system. If none substitute system needs approval	Not discussed, but assume <b>6-2.19.5.6</b> applies
<b>Ventilation</b>	<b>6-2.19.5.9</b> Two air changes per hour, mechanical or natural	<b>§167.31(a)</b> <b>§167.39(b)1</b> Well ventilated; assume standard set by <b>6-2.19.5.9</b> applies

#### A.4 Infrastructure and Services

Category	New York State Subpart 6-2	New York City Article 167
<b>Service Facilities, roads and other infrastructure</b>	<p><b>6-2.19.2.1.2</b>  <b>6-2.19.2.1.4</b>  Location of access roads, parking, buildings, water supplies, sanitary and storm sewers, electrical and telephone services and the proposed facilities relative to existing facilities.</p> <p>Location relative to the nearest population center with service facilities, such as medical, fire protection and communication.</p>	<p><b>§167.07(c)3</b>  Emergency Services. Location relative to service facilities, such as medical, fire and police protection and communication.</p> <p><b>§167.07(a)2</b>  Layout of the bathing beach, including, but not limited to: dimensions, bathhouses, access roads, parking, building, water supplies, sanitary and storm sewers, electrical and telephone services;  See also <b>Engineering Plans</b></p>

## B. Sanitary Survey

Category	New York State Subpart 6-2	New York City Article 167
<b>Maps: watershed</b>	<b>6-2.19.3.1</b> Show all potential sources of pollution and waste-water discharges: waste-water discharges, landfills or etc., adjacent land use and major physical contours, highways, etc.	<b>§167.25</b> Visual inspection for untreated sewage discharge, petroleum oil slick, floatable debris, medical/ infectious materials or other sources of contamination. All refuse(especially items such as syringes and medical refuse), garbage and debris left on the beach or floating nearby shall be removed and disposed of properly. The waterfront area of the beach shall be free of potholes, loose rocks, debris, glass containers, and other dangerous objects.
<b>Maps: Plot</b>	<b>6-2.19.3.2</b> drawn to scale, showing the actual bathing beach location, dimensions, contours, existing land use, and wastewater discharges within 10,000 feet of the proposed beach,	
<b>Sources of contamination</b>	<b>6-2.19.3.4</b> type, size, volume, and weather impact.	
<b>Seasonal, Weather and topographical impacts</b>	<b>6-2.19.3.3</b> <b>6-2.19.3.6</b> Variation in water levels; prevalent wind direction during the bathing season, rainfall, current measurement, topography, or unusual factors.	
<b>Water Quality</b>	<b>6-2.19.3.6</b> <b>6-2.19.3.7</b> <b>6-2.19.3.8</b> History of the bacteriological quality, pH, and turbidity, as well as physical, chemical and biological quality  See also <b>Water Quality</b> below	
<b>Waste-water discharges</b>	from sewage treatment plants, combined sewers, or other sources are not permitted within 750'	

## B.1 Site Assessment (NYC)

Category	New York State Subpart 6-2	New York City Article 167
<b>Maps: watershed</b>	N/A (covered in <b>Sanitary Survey 6-2.19.3</b> )	<b>§167.13(c)1A</b> Depict the waterbody and watershed: existing wastewater, storm sewer and combined sewer overflow discharge points, septic systems; agricultural runoff; landfills, commercial or industrial drainage; and anything that may impact water quality. Adjacent land use and major physical contour, highways, etc. All potential sources of pollution and wastewater discharge points must be shown.
<b>Maps: Plot</b>		<b>§167.13(c)1B</b> drawn to scale, showing the actual bathing beach location, dimensions, contours, existing land use, and wastewater discharges within 10,000 feet of the proposed beach,
<b>Sources of contamination</b>		<b>§167.13(c)1D</b> type, size, volume, rainfall and other weather impact.
<b>Seasonal, Weather and topographical impacts</b>		<b>§167.13(c)1C,E</b> Variation in water levels; prevalent wind direction during the bathing season, rainfall, current measurement, topography, or unusual factors.
<b>Water Quality</b>		<b>§167.13(c)1F,G,H</b> History of the bacteriological quality, pH, and turbidity, as well as physical, chemical and biological quality  See also <b>Water Quality</b> below
<b>Waste-water discharges</b>		from sewage treatment plants, combined sewers or other sources not permitted within 750'

## B.2 Water Quality

Category	New York State Subpart 6-2	New York City Article 167
History	<p>6-2.19.3.6 6-2.19.3.7 6-2.19.3.8</p> <p>History of the bacteriological quality, pH, and turbidity, as well as physical, chemical and biological quality</p>	<p><b>§167.13(c)(1) F,G,H</b></p> <p>History of the bacteriological quality, pH, and turbidity, as well as physical, chemical and biological quality</p>
Sampling Procedures	<p><b>6-2.15(b)</b></p> <p>Sample collection and analysis in accordance with the frequency, locations and procedures specified by the permit-issuing official.</p> <p>Sampling the proposed body of water from all possible sources.</p> <p>The results of at least one set of representative bacterial samples, pH tests, and turbidity tests each week for a period of eight weeks, and must include at least one set after heavy rains consisting of daily samples for a five-day period.</p> <p>Laboratories certified by the State Department of Health for water supplies analysis.</p>	<p><b>§167.15</b></p> <p>Sampling procedures based on potential pollution sources, stormwater discharges, historical water quality data, regional hydrodynamics, beach usage, beach length, and geomorphology for representation of water quality monitoring.</p> <p>The results of at least one set of representative bacterial samples, each week for a period of eight weeks shall be included. Eight sets of samples shall include at least one set after heavy rains consisting of daily samples for a five-day period.</p> <p>Laboratory needs valid current New York State Department of Health National Environmental Laboratory Accreditation Certification (NELAC)</p>
Bacteriological Counts	<p><b>6-2.15(c)</b></p> <p><u>Single Sample</u></p> <p>FECAL COLIFORM &lt;100 0 per 100 ml; ENTEROCOCCI Freshwater: &lt;61 per 100 ml for Marine: &lt;104 per 100 ml E. COLI Freshwater: &lt;235 per 100 ml</p> <p><u>Five or more samples - geometric mean series of 30-day period.</u></p> <p>COLIFORM &lt;2,400 total per 100 ml; FECAL COLIFORM &lt;200 per 100 ml; ENTEROCOCCI</p>	<p><b>§167.13(a)1</b></p> <p><u>Values geometric mean series of five or more samples / 30-day period.</u> ENTEROCOCCI a) marine &lt; 35 per 100 ml b) freshwater &lt; 33 per 100 ml E. COLI Freshwater: &lt; 126 per 100 ml</p>

	<p>Freshwater: &lt;33 per 100 ml for Marine: &lt;35 per 100 ml</p> <p>E. COLI</p> <p>Freshwater: &lt;126 per 100 ml</p>	
Physical and chemical including pH, and turbidity	<p><b>6-2.15(d)</b>  <u>Chemical</u>. water shall be free of chemical substances capable of creating toxic reactions to skin or membrane irritations to the general public.</p>	<p><b>§167.07(c)1G</b>  <u>Physical and Chemical</u>. The physical and chemical quality of bathing water, including color, odor, floatable debris, oils and greases, high turbidity and other substances that can potentially present a public health threat.</p> <p><u>Turbidity</u>. Possible to see an eight-inch black-and-white disk in four feet of water. Clarity tests should be performed at four-foot depth in the bathing area at a minimum of three different locations. A map depicting test locations, dates of sampling, and current conditions should be submitted. Exception for ocean beaches.</p> <p><b>§167.13(a)2</b>  No deposits, floatable debris, growths, oils, and greases, or any foreign substances that may potentially present a public health threat.</p> <p><b>§167.13(b)</b>  Preemptive Standards—New York City Wet Weather Advisory– notification as prescribed in §167.27(a).</p>
	<p><b>6-2.15(d)</b>  <u>Physical</u>. Objectionable color, odor, taste.</p> <p><u>Turbidity</u>. Possible to see an eight-inch black and white disk in four feet of water. Clarity tests should be performed at a four-foot depth in the bathing area at a minimum of three different locations. A map depicting test locations, dates of sampling, and current conditions should be submitted. Exceptions for ocean beaches and Great Lakes..</p> <p>A history of any unusual quality problems encountered in the bathing water should be included.</p>	
Biological	The biological quality of bathing area water, including objectionable vegetation, infectious snails, and poisonous or dangerous aquatic organisms, shall be discussed.	

## C. Safety Plans and Provisions

Category	New York State Subpart 6-2	New York City Article 167
<b>Personnel and Equipment</b>	<b>6-2.17</b> Requirements about levels of expertise, certifications, number of personnel based on beach characteristics, and bather numbers.Types of equipment based on beach characteristics, including size and type.	<b>§167.19(c)</b> <b>§167.21</b> Requirements about levels of expertise, certifications, number of personnel based on beach characteristics, and bather numbers.Types of equipment based on beach characteristics, including size and type.
<b>Plans</b>	<b>6-2.17(c)</b> Procedures for daily bather supervision, injury prevention, reacting to emergencies, injuries and other incidents, providing first-aid and summoning help.  Developed in consultation with personnel of adequate training and experience.	Procedures for daily bather supervision, injury prevention, reacting to emergencies, injuries and other incidents, providing first-aid and summoning help.  Developed in consultation with personnel of adequate training and experience.
<b>Signage</b>	<b>6-2.19.6.1</b> When no lifeguard is on duty or where swimming is prohibited. No bathing areas when owned by the operator. The exact size is specified. "No Diving" Markers are visible where the depth is less than eight feet. <b>6-2.16(c)</b> Public bathing is allowed during hours, and bathing at other times is prohibited. <b>6-2.17.10(vi)</b> minimum 36" x 24" size with safety conditions and methods for summoning CPR-certified individuals when CPR-trained staff is required must be posted.	<b>§167.19(a)(3-4)</b> When no lifeguard is on duty or where swimming is prohibited. No bathing areas when owned by the operator. The exact size specified. "No Diving" Markers must be clearly visible where the depth is less than eight feet. <b>§167.7(f)</b> Maximum occupancy, hours operation, and for areas that are closed to swimming
<b>Daily Records</b>	<b>6-2.18</b> Logbook of daily bathers using the beach, number of lifeguards on duty, weather conditions, water clarity, results of any water quality laboratory results and reports, and any reported rescues, injuries, and illnesses. Copies of records are submitted monthly and kept for 12 months. See also <b>Water Quality</b>	<b>§167.35</b> Logbook of daily bathers using the beach, number of lifeguards on duty, weather conditions, water clarity, results of any water quality laboratory results and reports, and any reported rescues, injuries, and illnesses. Copies of records are submitted monthly and kept for 12 months. See also <b>Water Quality</b>

## Appendix II. New York State Bathing Beach Regulations