

**Open Water Long Term Control Plan  
Combined Sewer Overflow  
CITIZENS ADVISORY COMMITTEE**

July 18, 2007

Commissioner Emily Lloyd  
New York City Department of Environmental Protection  
59-17 Junction Boulevard  
Flushing, New York 11373

Re: Response of CAC Members to DEP Presentations

Dear Commissioner Lloyd:

We, the undersigned participants in the Citizens Advisory Committee (CAC) for the Open Water Long Term Control Plan (LTCP) for Combined Sewer Overflows (CSOs) have been participating in the CAC meetings for the past year. Many of us also attended the June 12, 2007 presentation on the water component of PlaNYC 2030 given jointly by the New York City Department of Environmental Protection (DEP) and the Mayor's Office of Long Term Planning and Sustainability (Mayor's Office). In conjunction with the June 30, 2007 submission by DEP of its Waterbody/Watershed Facility Plans (WWFPs) to the New York State Department of Environmental Conservation (DEC), we write to summarize some of our more critical recommendations at this stage of the LTCP process, as well as some issues concerning the relationship between the LTCP and PlaNYC.

This letter is, by no means, intended to be comprehensive. Other useful comment is contained in the minutes of the CAC meetings and other documents. Moreover, we have not yet seen a complete version of the WWFPs, which themselves are several steps removed from draft LTCPs. We understand, however, that the WWFPs will be made available shortly after their submission to DEC. Once we have reviewed the WWFPs themselves, we expect to provide additional, more detailed comments. Nevertheless, based on the information DEP has thus far made available to us, we are providing herein a brief discussion of some of our more critical concerns and recommendations.

We submit these comments with the entire city's LTCP program in mind. It should be noted that the Open Water CAC has in many ways served as a de facto City-wide CAC given composition of this CAC and the breadth of the discussions at our meetings as well as the vast proportion of the City involved – what DEP defines as the “Open Water” area receives about half of all the City's CSO discharges and includes the East River, which has several severely impaired tributaries flowing into it, such as Flushing Bay and Creek, Westchester Creek/Hutchinson River, Bronx River and Newtown Creek.

Our specific recommendations are organized into ten categories, one for each of the nine mandated elements of the LTCP plus one of the “nine minimum controls” (public notification).

A list of documents referenced herein, and the abbreviations used when referring to them, appears at the end of this document.<sup>1</sup>

We hope this information will be useful to the City and to DEP in its preparation of WWFPs, and ultimately LTCPs, that will adequately address the significant adverse impacts CSOs cause on New York City's waters in a cost-effective manner, in full compliance with federal, state, and local law, and for the benefit of all New Yorkers who have and exercise the basic human right of access to and enjoyment of our waterways.

### **Recommendations**

#### **LTCP Element No. 1: CHARACTERIZATION, MONITORING, AND MODELING OF THE COMBINED SEWER SYSTEM**

- **Demonstrate Accuracy of Modeling on which WWFPs and LTCPs Will Be Based.**  
Virtually all of DEP's CSO planning is based on landside hydrologic and hydraulic (H&H) models, as well as water quality models, both of which must be calibrated and verified with monitoring of actual rain events to ensure a reasonable degree of accuracy. As EPA explains, "[i]n order to design a CSO control plan adequate to meet the requirements of the CWA [Clean Water Act], a permittee should have a thorough understanding of its sewer system, the response of the system to various precipitation events, the characteristics of the overflows, and the water quality impacts that result from CSOs" and the "use of models should include appropriate calibration and verification with field measurements." (EPA 1994, pp. 18691-92.) So as to demonstrate to DEC, EPA, and the public that the all models have been adequately verified and calibrated – and are therefore reasonably accurate – DEP must provide documentation that demonstrates appropriate calibration for *all* models used in analyzing the characteristics of the overflows and the resulting impacts on receiving waters. In particular, a sensitivity

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<sup>1</sup> While we are specifically commenting on the WWFP and LTCP process (and its relationship to PlaNYC), we wish to note more generally that these plans should not be developed in isolation. Rather, the City should strive to integrate and align its strategies concerning water quality policy for the entire Hudson Estuarine System – the Harbor, the Lower Hudson, Long Island Sound and the New York Bight and their watersheds – with those in other plans developed by the City and other governmental agencies and organizations including: the New York-New Jersey Harbor Estuary Program/Bight Restoration Program, the Long Island Sound Study, the Hudson River Estuary Program and the Corps's Comprehensive Restoration Program. In particular, the City (DEP, the Planning Commission as Coastal Commission, and the Mayor's Office), the State (DEC and the Governor's Office) and the federal government (especially EPA – through, among other things, the Federal-State Performance Partnership Process) are all involved, or should be involved, in all these plans, including the WWFPs and LTCPs, and all of these plans should be consistent with each other. We also wish to note here that past water- and waterfront-related programs, including the Section 208 Wastewater Management Plan and the City's Waterfront Revitalization Plan, went through a full Section 197-a approval process, which has not occurred here.

analysis must be included for the H&H models run using the software package InfoWorks, produced by Wallingford Software. Until all calibration reports and sensitivity analyses (as well as any other relevant monitoring data) are made available, it remains unclear whether adequate model calibration procedures have been performed, and therefore whether these simulations are appropriate to properly characterize the combined sewer system and its response to variable rainfall, soil types and conditions, population density, land use, and other conditions. Documentation of model calibration and verification is also crucial given that DEP's models are currently also being used to evaluate and to present to the public and to decision makers the probable impacts of large development projects throughout the City, such as the Atlantic and Hudson Yards projects, on CSOs. Although DEP has not yet made available all of its model calibration reports, we understand that they will be included as appendices to the WWFPs, and we look forward to reviewing them at that time.

- **Reconfigure the InfoWorks H&H Model , or Use Another Model, to Fully Evaluate Source Controls.** DEP and its consultants have informed us that the City-wide H&H model is not currently configured so as to easily allow the hydrologic and hydraulic consequences of stormwater source control measures to be adequately simulated. As we understand it, this is because these models were developed in order to simulate flow through the thousands of acres that make up each WPCP sewer service. Consequently, the resolution of the original models is relatively coarse. For example, tens of square blocks are aggregated into single hydrologic units called subcatchments, and only the WPCP's head works, interceptors, major trunk sewers, and sewers greater than 60 inches in diameter, are included in the sewer network. Because of these approximations, and the fact that stormwater source control technologies would alter flow patterns and pollutant mobilization rates within the large-scale subcatchments, these technologies cannot be directly simulated in the current configuration of existing DEP H&H models. Consequently, the efficacy of measures designed to keep stormwater out of the system currently cannot be readily modeled and compared to measures designed to store and treat combined sewage after it enters the system. We understand that the H&H model can be, and has been, adjusted to account for use of green design measures when it is used to evaluate a particular development project, such as Atlantic Yards. Whether this model can be adjusted to simulate stormwater source control technologies implemented sewer-shed or city-wide, or whether another model should be used instead, is currently unclear to us. Nonetheless, stormwater source control measures must be adequately modeled, monitored, and compared to other alternatives.
- **Provide Detailed – i.e., Daily or Hourly and Outfall-Specific – CSO Characterizations and Water Quality Data.** DEP has provided us with information demonstrating that pathogen levels in the ambient waters near some of the outfalls (such as the nine highest volume outfalls, sometimes referred to as the “Nasty Nine”) are quite high during or just after storm events, even though the 30-day geometric mean level in these same waters meets the current state water quality standards for coliforms. Consequently, merely stating that the Open Waters are in compliance with pathogen

standards does not accurately characterize the daily effects of CSOs on those waters. As EPA recognizes, the use of “appropriate time scales” is important because “CSO loads are typically delivered in short pulses during storm events.” (EPA 1995, p. 2-57.) Thus, while the current water quality standards are undoubtedly an important benchmark (and some of those standards are expressed as 30-day averages), proper characterization of CSO effects requires a fuller picture for planning, disclosure, public education, and public notification purposes.

In particular, the WWFPs should explain in detail (with supporting data) the following: which specific waterbody areas experience high pathogen levels such that human contact with those waters might be unadvisable, how frequently this occurs, the amount of rain that triggers those conditions, and the typical duration. For this purpose, the EPA single standard maximum (SSM) of 104/100 ml enterococci used at beaches and other coastal (primary contact) recreation waters would be an appropriate metric. Indeed, EPA considers the single sample maximum level to be “especially important for beaches and *other recreational waters* that are infrequently monitored or *prone to short-term spikes* in bacteria concentrations, e.g., waters that may be *affected by combined sewer overflow outfalls*.” (EPA 2006, p. 2; emphasis added.)<sup>2</sup>

Moreover, instantaneous levels (rather than averages) are critical for making public notification and closure decisions, as well as for evaluating whether notification and closure decisions are being properly made. Notifying the public, closing an access point or closing an entire waterbody to recreational use based only on average levels may unnecessarily expose the public to pathogens, unnecessarily restrict public access, or do both, if the notice or closure is not coincident with the pathogen spike.

For all of these reasons, as well as to give the fullest possible picture and most comprehensive characterization of CSO effects that available data allows, the WWFP reports should provide daily (or hourly) and location-specific water quality modeling results for all relevant pollution parameters, particularly pathogens and also dissolved oxygen.

- **Base Modeling on Best Available Climate Predictions Rather than 1988 Rain Year.** EPA requires that characterization of CSO effects be conducted “for a range of storm events.” (EPA 1994, p. 18691.) To date, all InfoWorks H&H simulations presented to the CAC group and to the public at large have been based on 1988 as an “average rainfall year.” While we recognize the need to pick a set of rainfall events for use as a baseline from which to compare the effects of various proposed CSO abatement strategies, the

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<sup>2</sup> While EPA’s statement was made in the context of the BEACH Act of 2000 and refers to recreational waters designated for swimming, surfing and other primary contact activities, the same principle should apply to characterization of CSO effects because, among other things, those waters are being used for primary contact recreation. (For a discussion of why kayaking is primary contact recreation, see discussion under LTCP Element 3, “Consideration of Sensitive Areas,” below.)

impacts of proposed new developments on city-wide CSOs, and other factors like population growth, neither DEP, nor its consultants, have ever made public any study justifying how 1988 was selected as average. Moreover, given the climate changes that have already occurred and those that are likely to occur over the planning horizon, DEP should not continue to base its modeling and characterization solely on one average rainfall year. Instead, a larger range of storm events (in terms of total rainfall volume and storm intensity), based on the best available climate science, should be used. Otherwise, the modeled predictions will be, at best, valid for historically average rainfall conditions, but not for *future* typical rainfall years, much less for future extreme years. PlaNYC 2030 recognizes that New York will be subjected to “intensifying storms”; in fact, the report states that that what used to be called a “hundred-year flood” is [currently] likely to occur every 80 years [and] in the future, such floods could become twice or even four times more frequent.” (NYC 2007, pp. 130, 133.) Thus, PlaNYC calls the 1983 FEMA floodplain maps “significantly out of date” (*id.*, p. 139), yet all of DEP’s CSO modeling and all of its CSO planning is still based on rain data from only 5 years after FEMA’s last map update. DEP is using population projections from 2045, which means that its rain data will be 57 years behind its population data, which is inappropriate given global climate change. We note that, in 2004, DEP initiated a climate change study with Columbia University. The City’s CSO modeling should be based on a much wider range of possible storm conditions, taking the reasonable worst-case possibility from the DEP/Columbia study and other state-of-the art climate science.

- **Base Modeling on Shared Quantitative Assumptions that Are as Accurate as Possible and Consistent with those in Other Related Plans.** The City and DEP should base its modeling on shared assumptions on: (a) the likely range of wet weather precipitation in type, seasonal distribution and intensity, based on agreed-upon long-term projections of the local impacts of world-wide climate change (as discussed above); (b), the likely range of dry weather sewage flows, based on agreed-upon long-term projections of land use and water use, which would be based in turn on long-term projections of households, economic activity and carrying capacity; and (c) the likely range of water levels in open waters and of storm surge events, also based on agreed-upon long-term projections of the local impacts of climate change, including type, frequency and intensity of extreme events.
- **Explain and Reconcile Data and Policies in the WWFPs/LTCPs with those in other Related Plans.** The City and DEP should explain and reconcile the WWFP and LTCP land use and wastewater projections with the PlaNYC 2030 projections of population distribution and economic centers (*see* NYC 2007, pp. 4-5, 19 (maps)). Further, the City and DEP should review the PlaNYC 2030 water quality goals, which are only for tributaries (*id.*, p. 54 (map)), and reconcile them with the water quality goals of the WWFPs and LTCPS. The City and DEP should adaptively manage the WWFP and LTCP policies based on PlaNYC initiatives relating to climate change, including: the NYC Climate Change Advisory Board (on overall policy) (*id.*, pp. 139, 155); the Climate

Change Task Force (on policy for all city infrastructure) (*id.*, pp. 138, 155); and the “community planning toolkit” (on policy for at-risk neighborhoods) (*id.*, pp. 138, 155).

- **Model Separate Stormwater Discharges with Appropriate BMPs Applied.** DEP’s modeling appears to assume that sewer separation would discharge untreated stormwater without the application of any BMPs to reduce either the volume or pollution content of such runoff. This approach biases the analysis of alternatives against sewer separation because it overestimates the pollutant loadings likely to occur in a sewer separation scenario. The modeling of separate stormwater discharges should assume that BMPs would be applied to those discharges.

## **LTCP Element No. 2: PUBLIC PARTICIPATION**

- **Do Not End or Suspend Public Participation upon Submittal of WWFPs in June 2007.** The CAC process should continue past June 2007 for at least two critical reasons. First, despite the near-universal recognition that source control measures must be an integral component of the WWFPs and LTCPs, the City and DEP have not yet developed source control measures as alternatives capable of being considered and evaluated in conjunction with end-of-pipe controls. As much of this work will occur after June 2007, the public must be deeply involved in that process. Second, the alternatives evaluation stage that will follow WWFP approval and precede LTCP submission is also a critical component of the development of the LTCP, and public participation must not be suspended during that part of the process, as was indicated in one of the PowerPoint presentations we were shown. We understand that there will be a public participation component to the Interagency Task Force on BMPs and we support that; however, since BMPs are only one component of the LTCP, participation in that process would not be an appropriate substitute for participation in the LTCP process. We also understand that DEP plans to conduct at least two LTCP meetings per year going forward. Given the importance and complexity of the issues involved, we believe that more frequent public meetings may be needed for the LTCP process to be successful.
- **Formally Designate the Open Water CAC as the City-wide CAC to Coordinate Public Participation.** The City should not continue to fragment its public participation into multiple separate CACs, but should instead develop a formal mechanism for coordinating its outreach efforts so as to develop a consistent and comprehensive City-wide CSO strategy. While meeting with local stakeholder groups can be valuable, the LTCP concerns several shared resources: the water bodies, the sewer system, and the City budget. Thus, CSO strategies implemented for one part of the City will affect other parts of the City by creating synergies or limiting the funds available to be spent elsewhere. The Open Water CAC meetings have become a forum for members of the other CACs to attend in addition to their own meetings. That process should be formalized so that the chairs or their designees from the other CAC groups are not only

invited but also strongly encouraged to attend the Open Water CAC meetings, which would be redesignated as the City-wide CAC.

- **Conduct More Technical Workgroup Sessions for the City-wide CAC.** The technical work group sessions held on specific topics (e.g., on monitoring and modeling, public notification, and source control) have been very informative, in fact, typically more so than the regular CAC meetings. More of these should be scheduled.
- **Open Meetings of the City's Interagency Task Force on BMPs to the Public.** We understand that the Interagency Task Force on BMPs will receive input from stakeholder groups, but we believe this does not go far enough in terms of transparency and public participation. We therefore recommend that there be citizen presence at the task force meetings, whether they be open to all members of the public or, at a minimum, include one or more stakeholder observers that would report to the general public on the progress being made and report the views of the public to the task force.
- **Make All Submittals to DEC Readily and Immediately Available on the Internet.** We understand that the WWFPs will be made available to us on the CAC website shortly after their June 30th submission to DEC and to the general public on DEP's website thereafter. DEP should continue this practice for future submissions to DEC as the LTCP planning process continues.
- **Hold Public Hearings on the City's CSO Control Plans.** The CAC meetings should not be deemed a substitute for open public hearings. Although we understand that DEC will hold public hearings for each of the WWFPs after DEP has made whatever revisions the state identifies, we are unaware of any public hearings planned by the City. To date, all meetings held by the City have been by invitation only. While the City has been flexible in allowing other stakeholders to participate, and as a CAC we appreciate this flexibility, we also feel that this generally narrow participation and low level of input by the public at large is insufficient for the overall success of the LTCP.

### LTCP Element No. 3: **CONSIDERATION OF SENSITIVE AREAS**

- **Prevent Increases in CSO Discharges (and Evaluate Eliminating Existing CSO Discharges) to Sensitive Areas.** As required by EPA's CSO Control Policy, the City should give the highest priority to controlling overflows to sensitive areas by: (a) prohibiting new or significantly increased overflows (i.e., from new development or redevelopment) to these areas; and (b) eliminating or relocating overflows that discharge to these areas, unless this is proven to be physically impossible or economically unachievable. (EPA 1994, p. 18692.)
- **Deem All Areas Where Swimming and Fishing are Occurring as Sensitive, whether or Not the the Area is Formally Designated for those Uses.** Waterfront areas known or

planned to be frequently used for public access – not only those officially designated as beaches or other formal access points – should be deemed sensitive.

- **Identify Kayaking as a Primary Contact Recreation Use.** EPA’s CSO Control Policy requires that all areas currently used for “primary contact” recreation be treated as “sensitive areas” in the LTCP process. (EPA 1994, p. 18692.) DEP and DEC should deem kayaking to be a “primary contact recreational use” consistent with the plain language of NYS regulations, as well as EPA’s policy and that of other states. Title 6, Section 700.1(35) of the New York Code of Rules and Regulations (NYCRR) defines “primary contact recreation” as “recreational activities where the human body *may come in direct contact with raw water to the point of complete body submergence ...* includ[ing], but ... not limited to, swimming, diving, water skiing, skin diving<sup>3</sup> and surfing.” (emphasis added.) We believe that kayaking fits this definition more closely than it fits the regulatory definition of “secondary contact recreation,” which are “recreational activities where contact with the water is minimal and where ingestion of the water is not probable .... includ[ing], but ... not limited to, fishing and boating.” 6 NYCRR § 700.1(40). Indeed, many other states and EPA agree with our conclusion. In its October 2006 report to Congress, Implementing the Beach Act of 2000, EPA stated: “The terms swimming and bathing are used in this report to encompass recreational activities (such as swimming bathing, waterskiing, surfing, and *kayaking*) where ingestion of, or immersion in, the water is likely. *States and territories typically identify these uses in their water quality standards as “primary contact recreation.”* (EPA 2006a, p. 2-4 n.2; emphasis added.)

#### LTCP Element No. 4: **EVALUATION OF ALTERNATIVES**

- **Include Deadlines for the City to Complete Its Evaluation of Source Control Measures.** It is now widely acknowledged that measures which retain stormwater runoff for beneficial reuse and/or allow it to infiltrate it into the soil before it reaches the sewers (referred to as “source control,” “best management practices” (“BMPs”), “low-impact development,” (“LIDs”)and/or “green infrastructure”) can be highly effective in controlling CSOs in a cost-effective manner while also providing ancillary environmental benefits, such as providing more greenspace, helping urban vegetation to flourish, and counteracting the urban heat island effect. Such measures – which include green roofs, trees and tree boxes, rain gardens, permeable pavement, rain barrels, among other things – were recently touted by EPA in a guidance memo emphasizing that “green

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<sup>3</sup> The CAC has previously submitted to DEP data identifying nearly a dozen areas in the City where scuba diving is known to take place for the purpose of recreation as well as environmental education. Given that Section 700.1(35) specifically enumerates skin diving and diving as primary contact recreational uses, we assume that the City and DEP recognize scuba diving as primary contact use of the waterways, and we wish to emphasize here that the City should do so and develop CSO mitigation strategies accordingly.

infrastructure” approaches that “infiltrate, evapotranspire, or reuse stormwater” and “decentralized storage and infiltration approaches” can be “a cost-effective and environmentally preferable approach to reduce stormwater and other excess flows entering combined or separate sewer systems.” (EPA 2007, p. 1) In addition, Mayor Bloomberg and other City officials, as well as the Association of State and Interstate Water Pollution Control Administrators, the National Association of Clean Water Agencies, and the Wet Weather Partnership (whose membership comprises large and small CSO communities across the country) have also publicly acknowledged the importance of these measures for controlling CSOs. Indeed, in our estimation, the failure of DEP, thus far, to fully consider, develop, and promote these measures as an integral part of the LTCP process (with the assistance of other agencies, as needed) is the most significant shortcoming in the City’s approach to controlling CSOs. Going forward, these tasks should be prioritized in the planning process and completed in a timely fashion for incorporation into the actual LTCPs. While the Mayor’s Office, and particularly the Interagency Task Force on BMPs, is beginning to look at these measures, the WWFPs should not be deemed approvable and should not be approved unless they contain enforceable deadlines for incorporating source control measures as an integral component of the plan. An open-ended placeholder for source control will not be acceptable to us. Given the fact that EPA issued its CSO Control Policy in 1994, and DEP has been subject to CSO consent orders issued by DEC since the early 1990s, very specific measures should be developed at this time, rather than being postponed until 2017 or later.

- **Clearly State in the WWFPs and LTCPs the PlaNYC 2030 Goal to Meet or Raise Existing Water Quality Standards so that 98% of NYC Waters are Suitable for Recreation and Design the CSO Plans to Meet that Goal.** DEP’s previous position – that it would not seek to meet existing water quality standards in many of the tributaries, and would instead abate CSOs only to a limited extent and then seek to have the water quality standards relaxed to match the resulting level of pollution – is wholly unacceptable to us. Fortunately, that approach (which was set forth in the Memorandum of Understanding attached to the 2005 CSO Administrative Order on Consent (ACO) and explained by DEP officials at that time) has now been rejected by the City. The new approach, as set forth in PlaNYC 2030, is vastly superior in that the City’s goal is now to improve water quality so that 90% of the tributaries (all but the upper Bronx River and Coney Island Creek) and 98% of all of the City’s waterways are suitable for recreation.<sup>4</sup> (NYC 2007, p. 55.) This means that not only would the existing water quality standards be met in all of the tributaries except the two mentioned (and the kills off Staten Island), but the water quality classifications for Gowanus Canal and Newtown Creek would be raised from “SD” to “I.” This change in approach and the new goal should be clearly stated in the WWFPs and LTCPs, and the alternatives evaluated in those documents should be based on the City’s most up-to-date articulation of these new goals.

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<sup>4</sup> PlaNYC does not address the Arthur Kill or Kill van Kull in its discussion of tributaries.

- **Evaluate Alternatives that Achieve Additional Goals.** DEP's criteria for evaluating alternatives should include not only the PlaNYC 2030 goals discussed immediately above (as well as assessing various capture percentages and other criteria required by EPA) but should also include, among other things: (a) percentage of rainfall kept out of the combined and separate stormwater systems; (b) the ancillary benefits of green infrastructure such as providing additional greenspace and mitigating the urban heat island effect; (c) a sustainable, holistic approach to wet weather pollution; (d) increasing public access to *all* NYC waters; (e) upgrading other water quality designations and designated uses; and (f) full compliance with the Clean Water Act.
- **Evaluate Alternatives in Comparison to Existing CSO Discharge Volumes, Not Just to "Baseline" Projected 2045 Discharge Volumes.** When DEP announced the 2005 CSO (ACO), it asserted that the required CSO control projects, when fully implemented, would "reduce" discharges to about 27 billion gallons per year. However, that is precisely the amount DEP reports for *current* annual CSO discharges. DEP later explained that if all of the existing excess dry-weather capacity at the sewage treatment plants (roughly 0.6 billion gallons per day) were to be used to accommodate population and development growth, then the CSO control projects would have no net effect, but would instead be completely offset by the increased dry-weather flow. DEP should now make clear the extent to which there will be real reductions in CSO discharges, as compared to present-day circumstances.
- **Utilize the NYC Soil Survey for Identifying BMPs.** The City and DEP should utilize the NYC Soil Survey as a resource for identifying sites for soil-based best management practices.
- **Separate Out a Stormwater Disposal Rate on Sewer Bills.** DEP and the NYC Water Board should develop a work program to restructure sewer rates so as to have two separate rates, one based on the estimated volume of stormwater discharged into the combined sewer system and another based on the estimated volume of raw sewage discharged. The method of estimating stormwater discharge only on the width of the lot size is wholly inadequate. Not only is the real impact insufficiently measured, there is also no program in place to incentivize any reduction in stormwater discharges. A more precise rate structure based on a lot's permeable/impermeable coverage of surface area would create an incentive to capture water, and would also be more equitable than the current system. We understand that such a study may be in its early stages following our presentation of this idea at a CAC meeting; however, we have heard that this issue may have been subsumed in the efforts to overhaul the billing and collection system. Nevertheless, since stormwater is the driver of the process that the LTCP is seeking to address, we do not feel that it is acceptable for the board or DEP to correct any other billing or accounting systems without also addressing this issue.

- **Include NYC Water Board in Interagency Task Force on BMPs.** Given its pivotal role in setting water rates that both raise money for infrastructure improvements and incentivize particular actions, the NYC Water Board should be added to the list of agencies participating in the Interagency Task Force on BMPs.

**LTCP Element No. 5: COST/PERFORMANCE CONSIDERATIONS**

- **Include All Costs and Benefits Associated with Green Infrastructure in Analysis.** The City should include all costs (and costs avoided) in its cost/performance analysis, including all costs and benefits (both water quality-related and others such as air quality) associated with green infrastructure, to facilitate a fair economic comparison. Accounting procedures should consider the full life cycle of each alternative.
- **Do Not Include Any Costs for Work that Will or Should be Done Anyway.** Routine maintenance of the sewer collection and treatment system (such as ensuring that regulators, pumps, etc. function as intended) and scheduled or necessary upgrades for sewage treatment in a rapidly growing city should be performed, evaluated, and financed separately from LTCP measures so that: (1) the baseline used for assessing new projects is a properly functioning sewer system; and (2) funding for LTCP CSO control projects such as source control or any of the other worthwhile measures identified in this process is not siphoned off to pay for upgrades, expansions, repairs and maintenance that would have or should have been done anyway.

**LTCP Element No. 6: OPERATIONAL PLAN**

- **Include Multiple City Agencies and Departments, Not Just DEP, in the Operational Plan.** New York City, not just DEP, has the legal and ethical obligation to control CSOs, and DEP – as has been widely recognized and discussed at CAC meetings – lacks the authority and budgetary control to fully address the CSO problem alone because it shares jurisdiction over above-ground stormwater management with various and numerous other agencies. Moreover, City-wide source control and related land use measures must be a critical feature of the LTCP, in addition to measures constructed within the sewer system. Thus, the operational plan must include a City-wide operation and maintenance program to be implemented by all affected and responsible City departments.

**LTCP Element No. 7: MAXIMIZING TREATMENT AT THE EXISTING POTW TREATMENT PLANTS**

- **Maximize Treatment of Combined Sewage in the Sewage System, but Minimize the Volume of Sewage that Enters the Sewage System in the First Place.** While sewage treatment is, of course, preferable to overflows, it is less desirable than the beneficial use

of stormwater before it enters the system. This is because primary- or secondary-treated effluent contains pollutants, discharged stormwater is not available for beneficial use, and concentrated sewage is more economical to treat than diluted sewage. Thus, the goal of maximizing treatment at existing plants should not supercede the more important goal of minimizing the total volume needing treatment.

**LTCP Element No. 8: IMPLEMENTATION SCHEDULE**

- **Accelerate the Implementation Plan.** The City and DEP have been subject to a consent decree with DEC since the early 1990s. In 1994, EPA issued its CSO control policy, in which it stated that a LTCP should typically take two years to develop. In 2000, Congress made EPA's CSO control policy a mandatory component of the Clean Water Act. It is now 2007, and the LTCP being contemplated contains projects stretching out to at least 2020, and, even then, DEP is unsure whether those projects will fully address the CSO problem. New Yorkers should not have to live with regular sewage overflows for another decade or more. Since DEP's analysis of source controls is lagging behind its analysis evaluation of other alternatives, the WWFPs should include an aggressive timeline, with enforceable deadlines, for completing the source control evaluation to ensure that results will be available by the time DEP submits its actual LTCPs.
- **Begin Implementing Source Control Measures Immediately Into City Projects.** Effective immediately, all City agencies should implement a policy of incorporating source control BMPs into the design of City projects such as reconstruction of streets as well as buildings, with the goal of maximizing the use of on-site retention, detention and infiltration techniques to reduce off-site discharge of stormwater. The lead agency on a project should be required to consult with DEP's Bureau of Environmental Planning and Assessment, and to describe its compliance with this directive in any CEQR/SEQRA documentation.
- **Amend the City's SPDES Permits Sequentially, Rather than Waiting for the Complete City-wide LTCP.** DEC should issue a Phase 2 permit (*i.e.*, a permit that requires implementation of the measures that have been identified in an approved LTCP) for each of DEP's wastewater treatment plants as soon as DEC approves the LTCP for that waterbody, rather than wait until there is an approved LTCP for the entire City, which is not expected for many years.

**LTCP Element No. 9: POST-CONSTRUCTION COMPLIANCE MONITORING PROGRAM**

- **Ensure the Accuracy of Post-Construction Monitoring.** DEP should ensure that the timing and location of post-construction water quality monitoring is sufficient to gather data from a representative sample of CSO discharge events (*i.e.*, sampling should be done during/after significant rainfall events and at locations sufficiently close to the outfalls).

DEP should also ensure there is sufficient pre-construction baseline data with which to compare the post-construction monitoring results.

**NMC No. 8: PUBLIC NOTIFICATION**

DEP's public notification program currently fails to alert the public to the location and occurrence of CSOs, fails to alert the public to potentially hazardous conditions, and fails to instruct the public as to how it can obtain more information on discharges, as required by EPA's CSO control policy, the NYS Discharge Notification Act of 1996, a/k/a the "Fisherman's Right-to-know Act," and DEP's State Pollution Discharge Elimination System (SPDES) permits. Furthermore, the City Department of Health and Mental Hygiene (DOH)'s beach closure notifications, which DEP relies on for the beaches, are insufficient to satisfy the permit requirement that the City provide notice of the location and occurrence of CSO events, which, of course, occur throughout the City and not only at beaches.

During the CAC meetings, CAC members provided extensive recommendations to DEP (in reports and PowerPoint presentations) as to how the City can improve its public notification program to comply with these requirements and meet or exceed the notification programs of other cities. Without repeating all of information in those documents, those recommendations can be summarized as follows:

- ◇ DEP should develop an interactive website incorporating predictive modeling of CSO in response to real-time meteorological data (including rainfall, tides, salinity, water temperature) and/or telemetered data documenting the occurrence of actual CSOs to alert the public to water quality conditions in all City waters.
- ◇ DEP should develop a broadcasted form of public notification, incorporating broadcast meteorologists on TV and radio, public service announcements, 311 interface and/or an email alert system that notifies the public of CSO events.
- ◇ DEP should install public notification systems at the water's edge, especially at outfalls near public access points such as soft-edge open space and boat launches. The CAC suggested a telemeter-linked CSO alert system of lights mounted above each outfall that indicate when an overflow is occurring or has recently occurred.
- ◇ DEP and DOH should expand their CSO monitoring at beaches and other waters with increased sampling and faster analysis techniques to support notification and closure decisions.
- ◇ DEP should improve its CSO outfall signage to function as another form of public notification at the water's edge. Signage should communicate the presence of a potential public health hazard due to combined sewer overflow, as well as offer a mechanism for the public to request additional information about discharges.

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- ◇ DEP should improve its education programs to provide the public with information on the causes and effects of CSO events in a way that both protects public health and builds community awareness and participation in upland stormwater controls, water conservation and litter prevention.

Sincerely,

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