Primer on the Evaluation of Alternatives to Combined Sewer Overflows

New Jersey's combined sewer overflow permit holders are required to submit a series of reports as part of the development of their plans, known as Long Term Control Plans, to reduce combined sewer overflows.

Long Term Control Plan Benchmarks:

July 1, 2018 - System Characterization Report - Public Participation Process Report - Compliance Monitoring Program Report - Consideration of Sensitive Areas Plan. Review the reports.

July 1, 2019 - Development and Evaluation of Alternatives report

July 1, 2020 - Selection and Implementation of Alternatives Report in the Final Long Term Control Plan

The next report, due on July 1, 2019, is the Development and Evaluation of Alternatives Report.

Permit holders will evaluate the following alternatives based on cost, water quality standards and ability to reduce sewer overflows. Permit holders can incorporate additional criteria for alternatives analysis, such as neighborhood benefits.

The Evaluation of Alternatives Report must evaluate the seven control alternatives listed below. The final Long Term Control Plans are expected to combine more than one alternative in ways that maximize community benefits and CSO reduction and minimizes cost.

- **Green infrastructure** – Nature-based solutions, like rain gardens and permeable pavement, that capture stormwater where it falls, before it enters the combined sewer system, allowing it to absorb into the ground or be saved for later use, thus reducing total storm flows or peak flows.
- **Increased storage capacity in the collection system** – Storage of sewage and stormwater in existing pipes or new storage structures (e.g., underground or above-ground tanks or storage tunnels) during a rainstorm and then releasing it to the sewage treatment plant following a storm or snow melt. Increasing storage capacity can also include cleaning existing combined sewers to reduce blockages and filled areas.
- **Sewage treatment plant expansion and/or storage at the plant** – Building more storage at the sewage treatment plant, or more capacity to treat sewage and stormwater.
- **Infiltration and inflow reduction** – Fixing combined sewers to reduce the amount of water that infiltrates into the pipes from cracks.
- **Sewer separation** – Adding a separate pipe system for stormwater that will discharge to a stream or river without going through the sewage treatment plant, thus reducing the volume in the sewage pipes that go to the treatment plant.
- **End-of-pipe treatment of CSO discharge** – Adding sewage treatment, including disinfection, at the end of the outfall pipes.
- **CSO-related bypass of the secondary treatment portion of the sewage treatment plant** – Creating more capacity at the sewage treatment plant by bypassing the secondary treatment process of cleaning the mixture of sewage and stormwater. This approach results in partial treatment of the combined sewer flows during storms, rather than complete treatment of part of the flow and no treatment of the overflows.

Questions to ask the permit holders about the CSO evaluation of alternatives:

1. What size storm event or rainfall intensity was used to evaluate the effectiveness of your design alternative?
2. Are you considering climate change in your evaluation of alternatives?
3. What are the interim goals or benchmarks you are planning to use to reduce combined sewer overflows? Do you have a five-year plan, a 10-year plan, etc.?
4. How can the plan be revised based on newer information, such as sea level rise or changes in storm event frequency and severity?
5. Are you using any community-based metrics in the evaluation? These include, among others, frequency of street or basement flooding, community greening projects such as rain barrels, planting trees or community-led green infrastructure projects, community-based employment, and affordability.
6. Has combined sewer cleaning been evaluated?
7. Are you incorporating green infrastructure into your CSO mitigation plan?
8. Has a cost-benefit analysis been completed to minimize the size and complexity of any proposed underground storage system?
9. Are you taking into consideration the green infrastructure guidance manual being prepared by New Jersey Department of Environmental Protection?
10. Are you incorporating, social, economic and environmental issues (triple bottom line) into your evaluation of alternatives?
11. How are community priorities being determined? How will community feedback be incorporated into decision-making process? And how will those changes be communicated back to community members?
12. Will the community have an opportunity to comment on draft Development and Evaluation of Alternatives Plans? Will the permit-holder respond to those comments?
13. Will you include an executive summary in the Development and Evaluation of Alternatives Plans to communicate clearly, in layperson's terms, your evaluation of alternatives**?**

For more information on reducing sewage in our waterways, visit the Sewage-Free Streets and Rivers campaign website at SewageFreeNJ.org