Arbitration Law Review

Volume 13 Article 9

12-1-2021

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By
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I. INTRODUCTION

One of the most overlooked effects of COVID and the increasing number of extreme weather events is the detrimental impact on storm and wastewater infrastructure. These events are compounding onto an already deteriorating system. In 2017, the American Society for Civil Engineers' ("ASCE") Infrastructure Report rated the United States wastewater infrastructure a D+.[1] Currently, there are over 800,000 miles of public sewage pipes in the United States.[2] But to meet current and future demands for wastewater, $271 billion in funding and 532 new systems are needed.[3]

Further escalating the wastewater problem are combined sewer overflows (CSOs) and sewer system overflows (SSOs) which can occur during storms.[4] Many municipalities in the United States use combined sewer systems to collect stormwater runoff, domestic sewage, and industrial wastewater into one pipe.[5] Normally, the water goes to a treatment plant, but when the system overflows, the untreated water flows directly into nearby streams, rivers, and other waterbodies.[6] These CSOs significantly impact public health and wildlife in nearly 860 municipalities in the United States.[7]

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1. Am. Soc'y of Civil Eng'rs, *Wastewater*, INFRASTRUCTURE REPORT CARD, https://www.infrastructurereportcard.org/cat-item/wastewater/ (last visited Oct. 19, 2020).

2. *Id.*

3. *Id*.

4. *See Urban Water Quality: Sewage Overflows*, U.S. GEO. SURVEY, https://www.usgs.gov/special-topic/water-science-school/science/urban-water-quality-sewage-overflows?qt-science_center_objects=0#qt-science_center_objects (last visited Oct. 24, 2020).

5. *See* U.S. ENVTL. PROT. AGENCY, COMBINED SEWER OVERFLOWS (CSOS) (2020), https://www.epa.gov/npdes/combined-sewer-overflows-csos; *Stormwater Management*, PHILLY WATERSHEDS, http://archive.phillywatersheds.org/watershed_issues/stormwater_management (last visited Oct. 24, 2020).

6. *Id*.

7. *Id.*; Am. Soc'y of Civil Eng'rs, *Conditions & Capacity*, INFRASTRUCTURE REPORT CARD, https://www.infrastructurereportcard.org/wastewater/conditions-capacity#stormwater (last visited Oct. 24, 2020).

Behind non-point source pollution[8], CSOs are the leading source of water pollution in the United States.[9] In 2014, 1482 CSO events discharged at least twenty-two billion gallons of untreated wastewater into the Great Lakes.[10]

Both waste and stormwater infrastructure are expensive and require continual maintenance, but the costs are primarily imposed on local governments.[11] In 2007, local governments spent forty-three billion dollars on wastewater infrastructure.[12] Local governments have responded to infrastructure demands by joining larger authorities or privatizing their storm and wastewater infrastructure.[13] But, when infrastructure improvements or increased maintenance demands water utility rates be raised, disputes can arise between the government and the authority managing the infrastructure ("Managing Entity").

When the disputes are not settled through alternate dispute resolution, the result is expensive, long litigation with expenses being passed to the taxpayers.[14] Litigation expenses are transferred to the residents either through taxes or by increasing water utility rates, leading to disparate effects on lower-income ratepayers.[15] "In many communities the lowest twenty percent of earners pay almost one-fifth of their income towards their

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8. Non-point source pollution refers to "any source of water pollution that does not meet the legal definition of 'point source'" including "storm water discharges and return flows from irrigated agriculture." U.S. ENVTL. PROT. AGENCY, BASIC INFORMATION ABOUT NONPOINT SOURCE (NPS) POLLUTION (last updated Oct. 7, 2020).

9. Am. Soc'y of Civil Eng'rs, *supra* note 7.

10. *Id.*

11 Am. Soc'y of Civil Eng'rs, *Funding & Future Need*, INFRASTRUCTURE REPORT CARD, https://www.infrastructurereportcard.org/wastewater/funding-future-need/ (last visited Oct. 25, 2020).

12. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-10-728, STAKEHOLDER VIEWS ON A NATIONAL INFRASTRUCTURE BANK AND PUBLIC-PRIVATE PARTNERSHIPS 1 (2010).

13. *See generally Regional Stormwater Management: Flood Control at Less Cost*, SPOTLIGHT ON EFFECTIVE PRACTICES (N.J. Future, Trenton, N.J.), Mar. 2019, at 1-2, https://www.njfuture.org/wp-content/uploads/2019/04/Regional-Solutions-for-Stormwater-Management.pdf (the Wyoming Valley Sanitation Authority acts as a regional authority for thirty-two municipalities to save money on stormwater infrastructure projects); *Planning for the Region's Future Sewer Needs*, LEHIGH CTY. AUTH., https://www.lehighcountyauthority.org/wastewater/sewer-overflows/ (last visited Oct. 25, 2020) (the Lehigh County Authority is a regional sewer system used by fourteen municipalities in the region); *Service Area and Facilities*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/about/service-area-and-facilities/ (last visited Oct. 25, 2020) (the Northeast Ohio Regional Sewer District maintains wastewater treatment plants and provides services for over one million residents in multiple cities).

14. *See generally* Steve Schulwitz, *Water-sewer dispute: How did we get here?*, THE ALPENA NEWS (Mar. 27, 2019), https://www.thealpenanews.com/news/local-news/2019/03/water-sewer-dispute-how-did-we-get-here/ (Alpena City, Michigan has been disputing since 2014 and has spent $1.16 million on attorneys and other costs associated with the case).

15. *See id.*

water bill."[16] In 2014, the average monthly sewer bill ranged from $12.72 in Memphis, TN to $149.35 in Atlanta, GA.[17] Furthermore, arbitrating infrastructure disputes is highly discouraged because the award generally only solves the present dispute instead of creating long-term solutions.[18] Also, awards often do not reflect the interests of the multiple parties and stakeholders involved and tend to disfavor the public party.[19] Thus, local governments must negotiate and preserve their relationship with the Managing Entity to reduce costs to their constituents and protect the local environment.

This article will first address the additional stresses on the system caused by COVID and extreme weather events and the increasing importance of adaptability in infrastructure management. This article will then address the Consensus Building Approach as an effective method to frame negotiations between local governments and the Managing Entity. Then this article will analyze three different storm and wastewater management negotiations and compare them to the Consensus Building Approach. Finally, this article will summarize the key strategies and problems to avoid in finding a successful resolution in a storm or wastewater management dispute.

II. COVID AND INCREASED EXTREME WEATHER EVENTS' IMPACTS ON WASTE AND STORMWATER INFRASTRUCTURE

COVID is wreaking widespread havoc in various sectors across the world including public health and the economy. However, an overlooked side-effect of COVID affecting many Americans is COVID's impact on storm and wastewater infrastructure. These impacts were caused by improper disposal of personal protection equipment (PPE) materials and using non-flushable materials as an alternative to toilet paper leading to

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16. *Wastewater Utilities Eye House Infrastructure Package to Address Priorities*, INSIDE EPA WEEKLY REPORT (Inside Washington Publishers, Arlington, Va.), Feb. 15, 2019.

17. Am. Soc'y of Civil Eng'rs, *supra* note 11.

18. *See* Dana Tims, *Sewer-Rate Fight between Milwaukie and Clackamas County Heading to Arbitration, but Long-Term Concerns Remain*, THE OREGONIAN (Jan. 10, 2019), https://www.oregonlive.com/milwaukie/2010/04/sewer-rate_fight_between_milwaukie_and_clackamas_county_heading_to_arbitration_but_long-term_concern.html ("the arbitrator's decision won't address the far more complex and contentious realities . . . [the parties] need to better understand why the rate negotiations heading for arbitration dissolved into such costly, legalistic chaos. If they don't . . . it probably will crop back up").

19. *See* Rui Cunha Marques, *Is Arbitration the Right Way to Settle Conflicts in PPP Arrangements?*, 34 J. MGMT. IN ENGINEERING, Jan. 2018, at 1,6 ("Arbitration should not be the first option or an overemphasized manner of settling disputes, because sometimes it is time-consuming, adds to projects costs, and makes the environment even more hostile than conventional courts . . . [arbitration] put[s] the public sector in an unfavorable position . . . experience shows that it can lead to controversial outcomes and be very tiring for both parties.").

sewer clogs, CSOs, and SSOs.[20] The damage caused by these non-flushable materials to storm and wastewater infrastructure is deceivingly expensive. For instance, in Murfreesboro, Tennessee, employees went from cleaning the pumping stations on a monthly basis to several times a week.[21] At one wastewater pumping station in Maryland, there was an increase of 37,000 pounds of wipes between January and March 2020 compared to the previous year.[22]

Operation and maintenance are the most expensive part of managing wastewater infrastructure. Local governments spend an estimated thirty billion dollars annually on operation and maintenance compared to twenty billion dollars on capital sewer expenditures.[23] For example, Michigan's Macomb County spent $50,000 removing a fatberg – a blockage in the sewer system made of fat, wipes, and other materials – that was one hundred feet long and eleven feet wide.[24] The community has also spent millions installing screens to catch the thousands of pounds of wipes that flow through every week.[25] Not only are expenses increasing, but the utility industry is also losing an estimated $12.5 billion in revenue because of COVID.[26] The non-residential sector is using less water due to business closures and the residential sector is increasingly defaulting on payments due to financial hardship.[27]

However, the unpredictable expenses are not limited to COVID. According to the World Meteorological Organization, "[e]xtreme weather and climate events have increased in frequency, intensity and severity as [a] result of climate change and hit vulnerable communities disproportionately hard".[28] Extreme rainfall events are expected

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20. *See Wipes, Masks and Gloves Among PPE Equipment Clogging Sewers, Storm Drains Across the U.S.*, COLUMBIA BROAD. SYS. (June 4, 2020, 6:33 AM), https://dfw.cbslocal.com/2020/06/04/wipes-masks-gloves-ppe-clogging-sewers-storm-drains-us/.

21. Claudia Lauer & John Fleshner, *Epidemic of Wipes and Masks Plagues Sewers, Storm Drains*, AM. PRESS (June 4, 2020), https://apnews.com/c063f6c45fbe7f7870b61936f77f3d34.

22. *Id.*

23. Am. Soc'y of Civil Eng'rs, *Funding & Future Need*, INFRASTRUCTURE REPORT CARD (last visited Oct. 25, 2020).

24. Lauer, *supra* note 21.

25. *Id.*

26. Shadi Eskaf, *Financial Implications of COVID-19 for Water and Wastewater Utilities*, UNIV. OF N.C. AT CHAPEL HILL (Mar. 26, 2020), http://efc.web.unc.edu/2020/03/26/financial-implications-of-covid-19-for-water-and-wastewater-utilities/.

27. *E.g., id.*

28. Pamela Falk, *Dramatic Increase Expected in Fierce Storms and Wildfires, U.N. Agencies Say*, CBS NEWS (Oct. 14, 2020, 6:25 PM), https://www.cbsnews.com/news/dramatic-increase-expected-fierce-storms-wildfires-united-nations-state-of-climate-report-2020-10-14/.

to be twice as common by 2050.[29] Storms are already increasing in frequency with the 2020 Atlantic hurricane season having a record-breaking thirty named storms.[30] This was the fifth consecutive year with an above average number of hurricanes.[31] Increased extreme rainfall events are extremely detrimental to storm and wastewater infrastructure. As water falls faster than the soil can absorb, stormwater runoff increases and eventually creates CSOs and SSOs.[32] These events will likely disparately impact small vulnerable communities that cannot as easily absorb the extra expenses of operation and maintenance as larger and more affluent cities can. Therefore, negotiations that can establish processes to respond to unexpected expenses and risks imposed by these events are necessary to avoid litigation.

III. HOW SHOULD LOCAL GOVERNMENTS CONDUCT NEGOTIATIONS?

Several factors make a negotiation successful in infrastructure disputes including engaging stakeholders, participating in collaborative adaptive management, focusing on mutual gains, and conducting scenario planning.[33] These factors are part of the Consensus Building Approach and are particularly relevant to storm and wastewater infrastructure disputes.[34] The first factor – engaging stakeholders – is key in infrastructure disputes due to the effect the resolution will have on the ratepayers in the community. When engaging stakeholders, one must make sure to represent all groups, and the representatives for those groups must have apparent legitimacy.[35] The outcome will likely increase utility rates or taxes, directly impacting ratepayers and residents financially. Therefore, ratepayers and residents will be more willing to embrace the outcome if they feel heard during the process. Consequently, for infrastructure disputes, it is vital to have the

29. Michelle Albert, Mike Nanos & Jacque-Ann Grant, *Can We Incorporate Climate Change Principles Into Wastewater Infrastructure Design?*, WSP (Apr. 11, 2019), https://www.wsp.com/en-CA/insights/ca-can-we-incorporate-climate-change-principles-into-wastewater-infrastructure-design.

30. NAT'L OCEANIC & ATMOSPHERIC ADMIN., RECORD-BREAKING ATLANTIC HURRICANE SEASON DRAWS TO AN END (Nov. 24, 2020), https://www.noaa.gov/media-release/record-breaking-atlantic-hurricane-season-draws-to-end.

31. *See id.*

32. *See* NAT'L OCEANIC AND ATMOSPHERIC ADMIN., ASK THE SCIENTIST: EXTREME RAINFALL, WHY IT HAPPENS AND HOW WE PREDICT IT (2018), https://www.noaa.gov/stories/ask-scientist-extreme-rainfall-why-it-happens-and-how-we-predict-it.

33. *See Tools*, MIT SCI. IMPACT COLLAB., https://scienceimpact.mit.edu/tools (last visited Oct. 25, 2020); *see also* Lawrence Susskind, Paul F. Levy & Jennifer Thomas-Larmer, NEGOTIATING ENVIRONMENTAL AGREEMENTS 36 – 40 (2000).

34. *See id.*

35. *Stakeholder Engagement*, MIT SCI. IMPACT COLLAB., https://scienceimpact.mit.edu/stakeholder-engagement (last visited Oct. 25, 2020).

ratepayers represented and any other parties with a stake in the dispute. For instance, including the Environmental Protection Agency ("EPA") may be necessary since compliance with the Clean Water Act is a frequent issue in waste and stormwater infrastructure disputes.[36] Effective stakeholder engagement can also help the main parties consider the underlying interests and values of the community and develop more innovative solutions.[37]

Local governments must disseminate information and regularly seek feedback from their constituencies to enforce public trust and ratepayer acceptance of solutions.[38] Another key way to engage stakeholders is to use engagement support tools like websites, polling, and podcasts.[39] If stakeholder engagement is done incorrectly then constituencies can become frustrated and lose trust in their representatives.[40] If enough constituents protest the agreement, the agreement's likelihood of ratification is lowered significantly.[41] If the parties have to resort to litigation, the dispute will likely last longer and be more expensive than if the parties had ratified the negotiated agreement.

Another important factor is for the agreement to incorporate collaborative, adaptive management practices. The agreement should be adaptable to increasing impervious surfaces, extreme weather events, and fluctuating populations. Instead of focusing on how to finance infrastructure and structure rates in the immediate situation, the focus should be on "institutionalizing ongoing cycles of evaluation and subsequent change."[42] An agreement should address that the infrastructure management plan is only temporary and must be adaptable to changing circumstances, like climate change and sudden population growth. Therefore, agreements should strive for flexible processes and methods rather than specific one-off decisions.

Additionally, negotiations relating to waste and stormwater infrastructure should use the mutual gains approach.[43] The mutual gains approach focuses on developing

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36. *See generally* Andrew Cherry, *Northeast Ohio Regional Sewer District Clean Water Act Settlement*, U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/enforcement/northeast-ohio-regional-sewer-district-clean-water-act-settlement (last updated May 9, 2017).

37. *Stakeholder Engagement*, *supra* note 35.

38. *See id.*

39. *Id.*

40. *Id.*

41. *See id.*

42. *Collaborative Adaptive Management*, MIT SCI. IMPACT COLLAB., https://scienceimpact.mit.edu/collaborative-adaptive-management (last visited Oct. 25, 2020).

43. *See* Lawrence Susskind, Paul F. Levy & Jennifer Thomas-Larmer, NEGOTIATING ENVIRONMENTAL AGREEMENTS 17 – 40 (2000).

relationships and options that meet all stakeholder interests.[44] The benefits of a good relationship are increased engagement "in the value-creating process", collaboration on how to create an effective and enforceable agreement, and adaptation to changed circumstances.[45] Local governments must build a long-term relationship with the Managing Entity because these infrastructure systems can last anywhere from sixty up to one hundred years and are heavily impacted by changing circumstances.[46] The long-term relationship and trust built through the mutual gains approach should reduce the likelihood of additional expensive long-term disputes.

The last important factor to a successful negotiation is scenario planning. When pricing infrastructure improvements or budgeting future operation and maintenance costs, the parties should consider multiple models depicting various outcomes.[47] The parties should establish survival parameters for the Managing Entity and use a family of probabilities to figure out the threshold for risk.[48] The goal is to price and conduct infrastructure development and maintenance so the Managing Entity is not losing money and the ratepayers are not overpaying.[49] For example, the city of Barrie in Ontario has modeled future climate data to inform decisions about how to size a new wastewater facility.[50] Modeling can also help with changes due to population fluctuations in the area, increasing impervious surface, and other factors that can impact the need for waste and stormwater infrastructure. By engaging in scenario planning, the parties can better price the infrastructure which will reduce disputes and save ratepayers and taxpayers money.

IV. EXAMPLE CASES OF UNSUCCESSFUL AND SUCCESSFUL NEGOTIATIONS

A. ALPENA, MICHIGAN: AN EXAMPLE OF WHEN NEGOTIATIONS GO WRONG

The infrastructure dispute in Alpena, Michigan is an example of unsuccessful negotiations leading to lengthy and expensive litigation. The dispute in Alpena,

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44. Susskind, *supra* note 43, at 17, 25.

45. *Id.* at 25, 40.

46. *See Average Life Expectancy of Select Infrastructure Types and Potential Climate-Related Vulnerabilities*, UNION OF CONCERNED SCIENTISTS, https://www.ucsusa.org/sites/default/files/attach/gw-smart-infrastructure-table-life-expectancy.pdf (last visited Oct. 25, 2020).

47. *See Scenario Planning*, MIT SCI. IMPACT COLLAB., https://scienceimpact.mit.edu/scenario-planning# (last visited Oct. 25, 2020).

48. Richard Bradley, London Sch. of Econs., Making Catastrophe Insurance Decisions when the Science is Uncertain, Talk at the Integrating Science and Values in Climate Risk Management Seminar (Oct. 8, 2020).

49. *See id.*

50. Michelle Albert, Mike Nanos & Jacque-Ann Grant, *Can We Incorporate Climate Change Principles Into Wastewater Infrastructure Design?*, WSP (Apr. 11, 2019).

Michigan, concerned an agreement where the city charges rates for the township's use of its water and sewer system.[51] The agreement established a method for calculating the amount of water and sewage rates the township would have to pay.[52] After the agreement expired in 2012, the city hired a consultant to study what rate adjustments were needed to maintain and repair the infrastructure.[53] The utility consultant found that an additional $3.6 million a year was needed to meet the city's infrastructure needs.[54]

The township responded that the rate change was too high and asked the city for more options.[55] Water rates were later changed from $2.91 per 1,000 gallons to $4.57 per 1,000 gallons, and the sewer rates were changed from $3.48 per 1,000 gallons to $5.17 per 1,000 gallons.[56] The average American uses eighty-eight gallons of water per day, with approximately thirty-three gallons used for sewage, which means the average monthly water bill for one American would increase from $8.25 to $12.66.[57]

The township refused to pay the new rates and continued paying the old rates.[58] The city retaliated by suing the township in 2014 for not paying the full rate.[59] This resulted in expensive litigation and by February 2019 there was $3.6 million in the township's escrow account.[60] The township and the city tried resolving their dispute and discussing other options before the rate hike, and again at a court-ordered mediation in 2017.[61] The second attempt to resolve the dispute only lasted a day because city officials stated that the mediator only had expertise on one method of rate-making, which drastically limited their options.[62]

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51. Steve Schulwitz, *Water-sewer dispute: How did we get here?*, THE ALPENA NEWS (Mar. 27, 2019).

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. Schulwitz, *supra* note 51.

57. *See* U.S. ENVTL. PROT. AGENCY, UNDERSTANDING YOUR WATER BILL (last updated Jan. 25, 2018), https://www.epa.gov/watersense/understanding-your-water-bill.

58. Schulwitz, *supra* note 51.

59. *Id.*

60. *Id.* (the township eventually stopped adding money to the escrow account. But until the dispute is resolved, or the township decides to temporarily pay the full rate the amount due will only increase).

61. *Id.*

62. *Id.*

In 2018, the governing boards of the city and the township voted on a process to establish rates that would end the dispute.[63] The potential methodology would base rates on factors like water usage, the costs of treatment, and more.[64] When returning to negotiation, the township held a public forum and discussed the case with residents, and reportedly most residents were pleased with what was discussed.[65] However, these negotiations failed even after the township's Board of Trustees and the city's council voted to ratify the agreement.[66] The township's attorney believed the city had buyer's remorse.[67] While the city's witness said the rate methodology was reasonable, the attorney stated the city seemed disappointed by the results.[68]

The costs of this dispute and the subsequent litigation have resulted in a loss of finances, opportunities, and time. The township has spent about $1.16 million on attorneys, consultants, and other associated costs related to the dispute.[69] The city engineer, Rich Sullenger, stated that more infrastructure projects could have been done if the township had paid the increased rates.[70] Lastly, this dispute has lasted for years and is ongoing as the township is appealing the case to the Michigan Supreme Court after the Michigan Court of Appeals denied the township's motion for reconsideration.[71]

The Alpena, Michigan case is an example of what happens when the negotiations go wrong and the parties have to go to litigation. Here, the township engaged in stakeholder engagement and adaptive management by disseminating information about the case to its residents and focusing on a methodology to establish rates. However, the lack of using the mutual gains approach, the strain on their relationship after years of

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63. Schulwitz, *supra* note 51.

64. Steve Schulwitz, *Judge orders end to Alpena, Alpena Township dispute*, THE ALPENA NEWS (Sept. 19, 2018), https://www.thealpenanews.com/news/local-news/2018/09/judge-orders-end-to-alpena-alpena-township-dispute/.

65. Steve Schulwitz, *'A willingness to bend' Township holds forum on water-sewer dispute, case back in mediation*, THE ALPENA NEWS (Dec. 20, 2018), https://www.thealpenanews.com/news/local-news/2018/12/a-willingness-to-bend/.

66. *Id.*; Steve Schulwitz, *Still no fix in water, sewer dispute: City, township could ink deal within 30 days*, THE ALPENA NEWS (July 28, 2018), https://www.thealpenanews.com/news/local-news/2018/07/still-no-fix-in-water-sewer-dispute/.

67. Schulwitz, *supra* note 66.

68. *Id.*

69. Schulwitz, *supra* note 51.

70. *Id.*

71. *See* City of Alpena v. Twp. of Alpena, No. 14-006077-CK, 2020 Mich. App. LEXIS 4296 (Mich. Ct. App. July 9, 2020); *see also* Steve Schulwitz, *Alpena Township appeals again in water-sewer fight*, THE ALPENA NEWS (Aug. 18, 2020), https://www.thealpenanews.com/news/local-news/2020/08/township-oks-secret-motion-in-water-sewer-case/.

litigation, and alleged indifference to proposed solutions early on in the dispute bred mistrust later on.

B. Cleveland, Ohio: An Example of Negotiating with the EPA as Another Party and the Loss of Stakeholder Engagement

The Northeast Ohio Regional Sewer District ("NEORSD") serves sixty-two communities with over one million people and eighty square miles of combined sewers.[72] NEORSD, which owns and operates three wastewater treatment plants in Cleveland and the surrounding area, was discharging nearly five billion gallons of untreated sewage approximately 3,000 to 4,000 times a year into Lake Erie and nearby rivers.[73] This discharge of sewage violated the Clean Water Act and an estimated three billion dollars over twenty-five years was needed to become compliant.[74] The United States Environmental Protection Agency ("EPA") sued the NEORSD for violations of the Clean Water Act resulting in a federal consent decree mandating these projects.[75]

NEORSD effectively used unique solutions to fund improvements to its storm and wastewater infrastructure. To pay for infrastructure improvements, ratepayers must now pay a stormwater management fee.[76] Depending on the amount of impervious area per residence, the stormwater management fee added an additional $3.09 to $9.27 to homeowners' bills per month.[77] But, to reduce the strain on lower-income ratepayers, Homestead and Affordability program participants only pay a fee of $2.07 per month.[78] Twenty-five percent of the stormwater management fee goes into a community cost-share

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72. United States v. Northeast Ohio Reg'l Sewer Dist., No. 1:10-cv-02895-DCN, 1 (N.D. Ohio filed July 7, 2011), https://www.neorsd.org/I_Library.php?a=download_file&LIBRARY_RECORD_ID=4994.

73. Andrew Cherry, *Northeast Ohio Regional Sewer District Clean Water Act Settlement*, U.S. ENVTL. PROT. AGENCY (last updated May 9, 2017); *What We Do*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/about/what-we-do/ (last visited Oct. 25, 2020).

74. *CSO Consent Decree, Not Rate Increase, on Dec. 2 Meeting Agenda*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/cso-consent-decree-not-rate-increase-on/ (last visited Oct. 25, 2020).

75. *See* Northeast Ohio Reg'l Sewer Dist., No. 1:10-cv-02895-DCN, 1 (N.D. Ohio filed July 7, 2011).

76. *What Will be the Cost Per Quarter for a Typical Homeowner?*, NE. OHIO REG'L SEWER DIST. (Mar. 26, 2020), https://customerservice.neorsd.org/s/article/What-will-be-the-cost-per-quarter-for-a-typical-homeowner.

77. *Id.*

78. *Id.*; *Cost-saving Programs*, NE. OHIO REG'L SEWER DIST., https://customerservice.neorsd.org/s/cost-saving-program (last visited Nov. 5, 2020)(the Homestead program is available for ratepayers over sixty-five or totally disabled with a household income under $35,000. The Affordability program is for ratepayers whose income is below 200% of the poverty level).

program to provide funding for specific stormwater management projects.[79] Also, NEORSD was allowed to run pilot demonstration projects to illustrate the effectiveness of less energy-intensive treatment options as a way to avoid expensive energy-intensive treatments.[80] This creativity with project management and decision-making has saved more than $300 million on projects.[81] Furthermore, NEORSD has helped build stakeholder buy-in by implementing affordability programs for ratepayers.[82] NEORSD has utilized stakeholder engagement and adaptive management practices by implementing affordability programs, the cost-share program, and the pilot programs to more efficiently meet federal obligations. NEORSD's main customers are the member communities it serves, and these programs are helping to keep its constituents happy.

However, there was public pushback against the consent decree. Partly because the first phase of implementation alone would increase the average ratepayers' monthly bill by nineteen dollars.[83] People were upset that the negotiations were "confidential" and that they were not part of the discussion.[84] Instead of meeting with ratepayers during the negotiations, NEORSD waited until after reaching an agreement with federal authorities to hold public meetings to explain the plan and its impacts on ratepayers.[85] But, during and after the ratification process, NEORSD has disseminated information to ratepayers through its website about the agreement and its impacts on ratepayers, the environment, and low-income populations.[86] While NEORSD did well in involving the EPA and member communities as stakeholders, the ratepayers felt dissatisfied with how NEORSD disseminated information and became frustrated.

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79. *Community Cost-Share Program*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/community/community-cost-share-program/ (last visited Oct. 25, 2020).

80. *What's in the Project Clean Lake CSO Consent Decree?*, NE. OHIO REG'L SEWER DIST. (Mar. 26, 2020), https://customerservice.neorsd.org/s/article/What-s-in-the-Project-Clean-Lake-CSO-consent-decree.

81. *What does this Mean for the Community? For Customers?*, NE. OHIO REG'L SEWER DIST. (Mar. 26, 2020), https://customerservice.neorsd.org/s/article/What-does-this-mean-for-the-community-For-customers.

82. *Cost-saving programs*, NE. OHIO REG'L SEWER DIST., https://customerservice.neorsd.org/s/cost-saving-program (last visited Oct. 25, 2020).

83. Thomas Jewell, *Federal Consent Decree to Expected to Nearly Quadruple Cleveland Heights' 2018 Sewer Bills*, CLEVELAND.COM, https://www.cleveland.com/cleveland-heights/2017/05/federal_consent_decree_to_expe.html (last updated Jan. 11, 2019).

84. *Id.*

85. *Why are my Sewer Rates Going Up? Public Meetings will Answer*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/why-are-my-sewer-rates-going-up-public/ (last visited Oct. 25, 2020).

86. *See Trustees OK Improvement plan to Reduce Sewage Discharges*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/trustees-ok-improvement-plan-to-reduce/ (last visited Oct. 25, 2020).

Ultimately, this agreement was an effective and affordable three-billion-dollar plan using both gray and green infrastructure.[87] The agreement also controls forty-six million gallons of CSOs and captures 98% of the combined sewage going through the system.[88] In comparison, Philadelphia's two-billion-dollar plan only captures 85% of combined sewage.[89] Overall, NEORSD's agreement utilizes the mutual gains approach and focuses on institutionalizing processes and creating innovative solutions. While there was some stakeholder engagement, the lack of participation by ratepayers in the negotiation stage has led to ratepayer dissatisfaction.

C. Allentown, Pennsylvania: an example case of rebuilding relationships, using the mutual gains approach, and incorporating collaborative adaptive management practices

In 2013, the Lehigh County Authority ("LCA") entered into an agreement with Allentown, Pennsylvania. In this $211 million agreement, the LCA leases Allentown's water and sewer systems.[90] In 2018, the LCA and Allentown got into a dispute due to unanticipated issues.[91] Before this dispute, the two parties had a complicated relationship with accusations on both sides.[92] The LCA estimated that Allentown needed about $150 million in system improvements over the next ten years.[93] To pay for improvements, LCA's board voted to place Allentown customers on a monthly billing cycle and double

87. Gray infrastructure is infrastructure "designed to move urban stormwater away from the built environment", examples include pipes and water treatment systems. Green infrastructure is infrastructure that mimics natural processes and absorbs or evapotranspirates the water. U.S. ENVTL. PROT. AGENCY, WHAT IS GREEN INFRASTRUCTURE? (last updated Nov. 2, 2020); *GREEN: Our Project Clean Lake Agreement was Groundbreaking, and here are 7 Reasons Why*, NE. OHIO REG'L SEWER DIST., https://www.neorsd.org/green-our-project-clean-lake-agreemen/ (last visited Oct. 25, 2020).

88. NE. OHIO REG'L SEWER DIST., *supra* note 87.

89. *Id.*

90. Emily Opilo, *No Proof Allentown Improperly Inflated Suburban Customers' Sewage Fees, Arbitrator Rules* (Feb. 15, 2019), https://www.mcall.com/news/local/allentown/mc-nws-allentown-lca-arbitration-20190215-story.html.

91. Andrew Wagaman, *Allentown City Council Approves Settlement Deal with Lehigh County Authority over Water-sewer Lease Disputes*, MORNING CALL (Aug. 12, 2020, 7:53 PM), https://www.mcall.com/news/local/allentown/mc-nws-allentown-council-water-sewer-lease-settlement-approved-20200812-4rmrob5bmvddpjnrozoiwou6iq-story.html.

92. *Id.*

93. Press Release, Allentown and Lehigh County Authority, City & LCA Reach Tentative Settlement (July 10, 2020) (on file with Lehigh County Authority), https://www.lehighcountyauthority.org/wp-content/uploads/2020/07/News-Release-City-and-LCA-Reach-Tentative-Settlement-July-10-2020.pdf.

the fixed water rate for the city's residential ratepayers to more than $300 annually.[94] This increased the amount by 107%, which Allentown argued was in violation of the agreement.[95] Allentown responded by suing the LCA, seeking a preliminary injunction which was denied.[96]

Luckily, Allentown and LCA reached an agreement that utilized many of the best practices discussed in the previous section. The agreement engages stakeholders, focuses on collaborative adaptive management, utilizes the mutual gains approach, and uses scenario planning.[97] To engage the stakeholders, the settlement had to be approved by the Allentown City Council, the LCA Board of Directors, and the LCA bondholders.[98] The city council's meetings were livestreamed and public participation in LCA meetings was virtual due to the pandemic.[99] The LCA also made presentations to the board public on its website and included figures and sample problems to explain the terms of the agreement.[100] Additionally, the agreement focused on collaborative adaptive management by institutionalizing processes and creating opportunities for evaluation and change. Furthermore, the settlement has a long-term component by providing for minimum annual pipeline replacement, calculation of Capital Cost Recovery Charge, rate adjustments, and capital improvement funding.[101]

The agreement also utilized the mutual gains approach. Mayor Ray O'Connell stated, "[b]oth sides have moved substantially from their original positions. The settlement is in the combined best interests of the city, LCA and our ratepayers."[102] Under the agreement, the LCA will pay actual water production costs and a proportional share for the capital improvements at the water treatment plant.[103] This payment structure lowers the costs of these projects to Allentown residents and the LCA benefits from

94. Wagaman, *supra* note 91.

95. Allentown v. Lehigh Cty. Auth., 222 A.3d 1152, 1155 (Pa. Super. Ct. 2019).

96. *Id.* at 1155-56.

97. *See generally,* Allentown and Lehigh County, *supra* note 95.

98. *Id*.

99. *Id.*

100. *See* Lehigh County Authority & City of Allentown, Remarks at LCA Board of Directors Meeting (July 20, 2020) (powerpoint available in Lehigh County Authority's website), https://www.lehighcountyauthority.org/wp-content/uploads/2020/07/LCA-City-Settlement-Detailed-Review-072020.pdf.

101. *See id.*

102. Allentown and Lehigh County, *supra* note 95.

103. *Id.*

increased city revenues.[104] Rates for Allentown residents will increase about eighty-eight dollars per year for most customers, and by 2024 the full rate increase will be $176 plus inflation – an amount far less than the originally proposed $300 increase.[105]

Additionally, if Allentown meets key benchmarks, the LCA will provide "rate relief" by freezing or reducing rates to city customers.[106] Examples of key benchmarks include meeting bondholder requirements and achieving adequate reserves for future system improvements.[107] The LCA will also help Allentown administer the lease by contributing $400,000 annually.[108] In addition, the agreement lowers the "rate of return" from the Pennsylvania Public Utility Commission's allowable capital cost recovery charge[109] of 9.75% to 5.45% for all future projects.[110] Although this change in the allowable recovery charge increases the LCA's risk by lowering its rate of return on infrastructure improvements, it lowers the impact on ratepayers. Additionally, the agreement reduces the amount of required yearly water main replacements and, instead, focuses on increasing leak detection.[111] All of these tradeoffs protect the LCA and its bondholders' investment by providing benchmarks while helping the city keep water and sewer rates down.[112] Moreover, the agreement used scenario planning by using charts to model the impacts of rates on customers.[113] The agreement reached between Allentown and the LCA utilized stakeholder engagement, focused on collaborative adaptive management, used the mutual gains approach, and conducted some scenario planning. Although the agreement had many successful aspects, the agreement did not consider extreme weather events in its scenario planning.

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104. Allentown and Lehigh County, *supra* note 95.

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. "A 'Capital Cost Recovery Charge' is a reimbursement and consists of: (i) the amount of principal and debt incurred to finance the Major Capital Improvement; and (ii) the return on equity contributed to pay capital costs associated with the Major Capital Improvement, equal to a standardized return." Middletown Water Joint Venture v. Middletown, No. 1:19-CV-1402, 2020 U.S. Dist. LEXIS 63860 (M.D. Pa. Apr. 13, 2020).

110. Allentown and Lehigh County, *supra* note 95.

111. Lehigh County Authority & City of Allentown, Remarks at LCA Board of Directors Meeting (July 20, 2020) (powerpoint available in Lehigh County Authority's website).

112. *Id.*

113. *See* Lehigh County Authority & City of Allentown, *supra* note 111.

V. CONCLUSION

In conclusion, COVID is currently deteriorating the storm and wastewater system and in the future, extreme weather events are likely to as well.[114] Since storm and wastewater system improvements and maintenance are expensive and are paid mainly by local governments, disputes are likely to occur if a process is not put in place. Litigation can be expensive and take years, with those expenses being transferred to the ratepayers and taxpayers. Therefore, local governments must handle negotiations carefully and maintain their relationship with the Managing Entity to prevent costly disputes that could end in litigation.

The key factors to a successful negotiation are engaging stakeholders, participating in collaborative adaptive management, focusing on mutual gains, and conducting scenario planning.[115] Local governments must keep their constituencies informed and, if possible, include them in the negotiation process. The agreement must institutionalize processes of evaluation and adaptation that focus on how rates should be calculated, how and when to replace infrastructure, and how disputes should be resolved. If the agreement includes those terms, the parties are less likely of having to repeat this process. Relationship building and maintenance should be the key focus of the parties due to the long life of infrastructure and how frequently system needs can change. Lastly, scenario planning is critical but is rarely done effectively since it can be hard to translate models into solutions.[116] Overall, storm and wastewater infrastructure is an investment with lots of risks, usually passed onto ratepayers through higher rates. Therefore – like the insurance industry – any agreement needs to balance risks to guarantee a return on investment while not overcharging the ratepayers.[117] As extreme weather events increase and the COVID pandemic continues, local governments must use these strategies to lower the impact of increasing infrastructure costs on their constituents.

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114. *See* NAT'L OCEANIC AND ATMOSPHERIC ADMIN., ASK THE SCIENTIST: EXTREME RAINFALL, WHY IT HAPPENS AND HOW WE PREDICT IT (2018).

115. *Tools*, MIT SCI. IMPACT COLLAB. (last visited Oct. 25, 2020); Lawrence Susskind, Paul F. Levy & Jennifer Thomas-Larmer, NEGOTIATING ENVIRONMENTAL AGREEMENTS 36 – 40 (2000).

116. *Scenario Planning*, MIT SCI. IMPACT COLLAB. (last visited Oct. 25, 2020).

117. *See* Richard Bradley, London Sch. of Econs., Making Catastrophe Insurance Decisions when the Science is Uncertain, Talk at the Integrating Science and Values in Climate Risk Management Seminar (Oct. 8, 2020).