

Assessing the Town of Manchester's Compliance with PA 25-33 and MS4

Abstract: This report aims to analyze the compliance of five policy documents from the Town of Manchester with two state laws. It summarizes Connecticut State General Stormwater Permit and Connecticut Public Act 25-33. It discusses the Town of Manchester's Plan of Conservation and Development, Zoning Regulations, Subdivision Regulations, Stormwater Management Plan, and Public Improvement Standards in comparison to the requirements set out in these state policies. It identifies the largest places for growth being within discussing vulnerable populations and environmental justice, as well as incorporating long-term data projections. Recommendations for filling these policy gaps are outlined within the report, such as a climate vulnerability assessment and adding quantifiable pollutant goals to documents.

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Key Terms

BMP: Best Management Practices; activities and designs that are intended to prevent or reduce the discharge of pollutants into water bodies

DEEP: Connecticut Department of Energy and Environmental Protection

LID: Low Impact Development; a sustainable land use planning and engineering design that manages stormwater runoff by mimicking natural hydrology

MCM: Minimum Control Measures; six essential components dictated within MS4

MS4: Municipal Separate Storm Sewer System; a general permit administered by the Connecticut Department of Energy and Environmental Protection that Manchester is required to abide by.

PA 25-33: Connecticut Public Act 25-33; a Connecticut law made to promote climate resilience, flood management, and specific pesticide regulating.

PIS: Public Improvement Standards; regulations in Manchester that dictate the design, construction, and inspection of infrastructure like roads, sidewalks, and drainage.

POCD: Plan of Conservation and Development; it is a long-term planning document created by Manchester to guide land use, growth, and environmental protection

SWMP: Stormwater Management Plan; created by the town of Manchester in accordance with the MS4

TMDL: Total Maximum Daily Load; a regulatory calculation that specifies the amount of a pollutant that a waterbody can receive daily while still meeting water quality standards

MS4 Overview

The MS4 is issued by Connecticut Department of Energy and Environmental Protection (DEEP) in response to the National Pollutant Discharge Elimination System. It is a regulatory program under the Municipal Separate Storm Sewer System General Permit, which applies to municipalities, and other public entities that own or operate storm sewer systems in urbanized areas. The permit regulates discharges from those systems to surface waters.¹ It requires towns to submit a Stormwater Management Plan following Best Management Practices (BMP) with timelines and measurable goals that fulfill six different Minimum Control Measures (MCMs).² Additionally, the MS4 requires annual progress reports be submitted to DEEP and for towns to monitor the quality of water bodies.³

¹ Connecticut Department of Energy and Environmental Protection. 2026. *Municipal Stormwater*. January 16. <https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Municipal-Stormwater>.

² Connecticut Department of Energy and Environmental Protection. 2026.

³ University of Connecticut. n.d. *NEMO Connecticut MS4 Guide*. <https://media.nemo.uconn.edu/ms4/basics/permit.htm>.

The six MCMs outlined within the MS4⁴:

1. **Public Outreach and Education:** Implement educational programs that promote BMPs and emphasize that polluted stormwater runoff is the most significant source of water quality problems. The programs must at least provide information on “management of pet waste, application of fertilizers, herbicides, and pesticides, impervious cover and impacts of illicit discharges and improper disposal of waste into the MS4”.⁵ The MS4 permit suggests towns target specific audiences and partner with local organizations to be successful.
2. **Public Involvement and Participation:** The town must provide opportunities for the community to engage with the planning and implementation process for the municipal Stormwater Management Plan. A public notice for review and comments of the town’s Stormwater Management Plan is required under MS4 and enlisting local organizations for implementation assistance is suggested.
3. **Illicit Discharge Detection and Elimination (IDDE):** Requires towns to develop an IDDE program that gives the town legal authority to eliminate illegal discharges to its stormwater system. It requires the town to prohibit, investigate, and eliminate illicit discharges as well as provide a public reporting system. The Annual Report must document public reports and the towns response. Finally, the town must implement a system of maps showing municipal stormwater discharges.
4. **Construction Site Stormwater Runoff Control:** The municipality must have a plan made that has the goal of controlling stormwater discharge from land disturbance or development with more than one acre of soil disturbance. Additionally, the town is required to have site plan reviews and notify developers of their potential need for DEEP permits.
5. **Post-Construction Stormwater Management:** The town must have a legal authority that requires developers to consider Low Impact Development (LID) techniques and runoff reduction site planning.
6. **Good Housekeeping and Pollution Prevention:** The town must conduct a formal employee training program. Additionally, towns are expected to repair and rehabilitate infrastructure in a timely manner. Sites must be maintained to minimize pollutant discharge and there must be a program in place to inspect permittee owned and operated infrastructure. Also, the town must introduce snow and ice control practices. Finally, MS4 includes stipulations for controlling pollutants from outside entities in accordance with their permits authorized under Sections 22a-430 or 22a-430b of the Connecticut General Statutes.

⁴ Connecticut Department of Energy and Environmental Protection. 2026.

⁵ Connecticut Department of Energy and Environmental Protection. 2026.

PA 25-33 Overview⁶

The Public Act 25-33, also known as Senate Bill 9, is meant to strengthen environmental planning and climate resilience at both the state and municipal levels. Its key obligations are outlined below, depicting the different requirements it sets forth for municipalities.

Key Obligations⁷:

- Sections 5 and 6 require municipal zoning commissions and boards to provide DEEP with a coastal site plan for all activities proposed within specific areas.
- Section 7 outlines a requirement for evacuation plans and hazard mitigation plans that identify threats to transportation, critical infrastructure, how sea level change may affect land use (where applicable), and addresses strategies to mitigate risks associated with climate change.
- Section 8 depicts that towns must submit a geospatial data file on every culvert and bridge in the municipality to its council of governments.
- Sections 11 through 14 requires that municipal POCDs expand to include climate change risks and strategies to address them.
- Section 16 focuses on sea level rise and requires municipal zoning regulations to consider these changes and provide mitigation strategies. It outlines recommendations, such as for the regulations to require resilience and provide incentives for flood-risk reduction building methods.
- Sections 16, 17, 18, and 33 discuss a transfer of development rights system. They recommend towns to create shared regional systems, which can be administered by regional planning agencies. It endorses towns working together to manage development rights within. Finally, it will dictate where development can and cannot occur in a manner easily accessible to the town, developers, and residents.
- Sections 21 through 30 set up a framework that encourages towns to create special districts to fund projects that focus on climate change mitigation. They suggest towns raise money through increasing property tax revenue, charging property owners in the district who will benefit from the project, or borrowing money through bonds. Finally, they allow towns to lock in property values for tax purposes in the district for up to 30 years which assists in making financing more predictable.

Policy Alignment Chart

The chart below depicts five different policy documents from Manchester and how they compare to the main goals within PA 25-33 and MS4. The topic column includes categories that cover the essential requirements discussed within PA 25-33 and MS4. These categories are derived from the above overviews on the state laws, highlighting the main goals the policies set

⁶ 2025. *Public Act 25-33*. State of Connecticut.

⁷ Heft, Martin L., Christine Goupil, and Rebecca Augur. n.d. *2025 Municipal Impact Legislative Update*. Hartford: Connecticut Office of Policy and Management.

for municipalities to achieve. Within future charts in this report, the topic column will remain the same, then two columns will discuss how PA 25-33 and MS4 relate to it, with an additional column analyzing one of the five Manchester policy documents. Note that all but two categories are sufficiently covered by at least one piece of policy in the below chart.

Topic	POCD	Zoning	Subdivision	SWMP	PIS
Stormwater & water quality	Acknowledges stormwater but lacks measurable goals	Focuses on drainage, does not include water quality standards	Requires stormwater reports (could add pollutant targets)	Strong compliance with MS4, including all MCMs and BMPs	Sets measurable target for pollutant removal
Public involvement/education	Strong focus on public engagement	Includes public hearings	Procedural	Strong MS4 outreach programs	Does not discuss
Land use & development	Thoroughly discusses economic and multimodal development	Strong controls on land use and development, making an enforceable body (could intertwine more LID)	Creates regulatory authority but does not intertwine LID into it	Creates framework for stormwater management of projects on land	Minimal impact as it applies after planning decisions are made
Climate hazard/risk planning	General resilience	Does not include long-term data	References flood-risk	References flooding	Uses past data (could include future projections)
Mapping infrastructure/geospatial data	Not included	Not included	Includes engineering and mapping submissions	Strong MS4 mapping compliance	Includes flood mapping and data
Resilience of infrastructure	References but could include at-risk areas	Requires project review (could include resiliency)	Sets engineering standards (could integrate resiliency)	Not included	Sets engineering standards (could integrate resiliency)
Annual reporting/monitoring	Not included	Not included	Requires stormwater management report (only for approval not long-term)	Requires annual reporting	Requires Stormwater Management Reports

Assessing Manchester POCD⁸

The POCD emphasizes economic growth, multimodal transportation, and preservation of parks and open space. It generally aligns with both MS4 and PA 25-33 goals with sustainability and coordinated planning, however, it pre-dates the PA 25-33 so it lacks future climate projections and mapping requirements included in the state law. The POCD supports public engagement and environmental considerations with land use while broadly addressing stormwater management and resilience. However, it lacks measurable goals and identification of vulnerable populations. It is a guiding document that outlines an important vision for the town with considerations for the environment.

Major Focuses:

- Economic development: supporting business growth, job creation, and attracting people to invest in commercial areas
- Focus on a multimodal system of transportation
- Emphasize importance of public parks and trails

Compliances:

MS4:

- Complies with MS4 Stormwater Plan Requirement: Follows the permit structure and submits annual reports that document progress towards the six control measures⁹
- Supports MCMs public education and participation by emphasizing community engagement, public amenities, and environmental awareness
- Encourages development patterns to reduce runoff which would support post-construction stormwater management

PA 25-33:

- Supports including climate change, sustainability, and resilience considerations throughout the plan and emphasizes environmental protection, preserving open space, and making land use decisions that are sustainable
- Encourages coordination between land use, transportation, and environmental planning which complies with the public act's goal of integrating planning across municipal systems

Areas for Improvement:

PA 25-33:

- Does not include climate and hazard projections/mappings or identification of vulnerable areas and critical infrastructure which the PA 25-33 now mandates (the POCD predates PA 25-33)

⁸ Manchester Next. 2023. *Plan of Conservation and Development*. Town Planning and Urban Design Collaborative.

⁹ Town of Manchester. n.d. *Storm Water Pollution Prevention*.

<https://www.manchesterct.gov/Government/Departments/Public-Works/Engineering-GIS/Storm-Water-Pollution-Prevention>

- New POCDs must include geospatial data which is not submitted within the current Manchester POCD
- Addresses climate resilience generally but an updated version should highlight specifics such as quantifiable flood risk projections, infrastructure strain, and hazard mitigation; the PA 25-33 emphasizes data-driven planning which is not seen in the POCD

MS4:

- Could go beyond and include pollutant reduction targets to promote working towards a specific water quality goal
- Lacks inclusion of illicit discharge detection and elimination
- Does not include priority areas for green infrastructure or stormwater retrofits which can help promote implementation of goals within the MS4

POCD Compliance Chart:

Topic categories selected based on the main ideas presented in MS4 and PA 25-33.

Topic	MS4	PA 25-33	Manchester POCD
Stormwater & water quality	Permitted program with BMPs & monitoring	Relating to climate hazards	POCD mentions stormwater management and environmental protection and resilience generally but lacks measurable goals.
Public involvement/education	Required by MS4 permit	Not a specific municipal requirement	POCD was created with an emphasis on public engagement, focusing on community input on economic development and quality of life, but does not include a specific environmental education initiative
Land use & development	MS4 influences site controls but not broad zoning	Requires climate considerations in municipal planning & zoning	Central focus on transit-oriented development but does not outline climate risks with land use (walkability projects may increase impermeable surfaces)
Climate hazard/risk planning	Indirectly (stormwater affects flood risk)	Required	Generally discussed and recognizes environmental stewardship but does not include climate projections and vulnerable communities
Mapping infrastructure/geospatial data	For stormwater infrastructure & DCIA	Required for plans	Not included
Resilience of infrastructure	Not an MS4 focus	Required	Referenced but should further analyze at-risk infrastructure and make a climate plan for these infrastructures
Annual reporting/monitoring	Required for MS4	Not required beyond data submission tied to plans	Not included

Assessing Zoning Regulations¹⁰

The Zoning Regulations are one of the strongest regulatory tools for Manchester. They provide clear authority over land use and development with site plan reviews and public hearings. They have strong development guidelines but are less robust in environmental standards. They provide crucial enforcement framework that influences development plans but could grow to include greater specific environmental goals.

Major Focuses:

- Clearly define various zoning districts with permit uses and special exceptions; emphasizing site preparation is strictly regulated for environmental protection
- Outline standards for site development and site plan reviews, and that many uses require Planning and Zoning Committee approval
- Floodplain considerations are present, with floodplain overlay zones, compliance with federal standards, permitting processes, and development restrictions. Floodplain rules may overlap with wetlands regulations, but Zoning defers to Inland Wetlands when wetlands are involved

Compliances:

MS4:

- Zoning and Planning have review authority and can dictate adequate stormwater plans for new developments
- Requirement of a Soil Erosion and Sediment Control Plan with any application for a development
- Includes provisions for drainage systems, requiring them to be in accordance with detailed standards to meet site development criteria
- Reference “Sustainable Design and Low Impact Development Guidelines” which include provisions for bioretention, infiltration, green roofs, permeable surfaces, etc. which align with construction site stormwater runoff control and post-construction stormwater management¹¹

PA 25-33:

- Has the regulatory (permits and special exceptions) structure that can support environmental considerations within PA 25-33
- Includes discussions on flood-risk reduction and awareness
- The requirements for special permits and site plan review provide a legal framework to ensure PA 25-33 compliance. Specifically, to consider climate change, resilience, and environmental impacts with zoning regulations

Areas for Improvement:

¹⁰ 2025. *Zoning Regulations*. Manchester: Town of Manchester.

¹¹ 2020. *Sustainable Design and Low Impact Development Guidelines*. Manchester: Town of Manchester, Connecticut.

MS4:

- Wetlands and floodplain guidelines inadvertently help control water quality; however, this environmental incentive is not explicitly listed under 2.4.1 Floodplain Zone in the Zoning Regulations
- Does not include explicit requirements for development approvals to meet measurable water quality benchmarks which is recommended under the post-construction standards in the MS4

PA 25-33:

- Does not include projected precipitation increases and flood-risk projections, it looks at past FEMA data, but could include more forward-looking projections
- Further enforce nature-based solutions for development and stormwater; the “Sustainable Design and Low Impact Development Guidelines” are promoted but it does not require them
- Explicitly consider vulnerable communities and environmental justice beyond the affordable housing provision; could include provisions to evaluate disproportionate impacts of flooding, heat, and/or pollution

MS4 and PA 25-33:

- Does not create incentives to limit impermeable surfaces, no cap on pavement. They require plans to be reviewed, which can bring in environmental considerations but does not automatically have to

Zoning Regulations Compliance Chart:

Topic categories selected based on the main ideas presented in MS4 and PA 25-33.

Topic	MS4	PA 25-33	Zoning Regulations
Stormwater & water quality	Permitted program with BMPs & monitoring	Relating to climate hazards	Allows drainage control, but focuses on drainage instead of pollutant removal/control
Public involvement/education	Required by MS4 permit	Not a specific municipal requirement	Includes public engagement opportunities at hearings but does not include any stormwater/environmental educational programs
Land use & development	MS4 influences site controls but not broad zoning	Requires climate considerations in municipal planning & zoning	Controls land use and site planning well with opportunities for special review, but could intertwine more environmental requirements or low impact development incentives instead
Climate hazard/risk planning	Indirectly (stormwater affects flood risk)	Required	Needs more long-term projections and emphasis on flood-risk and integration of climate resilience into zoning approvals

Mapping infrastructure/geospatial data	For stormwater infrastructure & DCIA	Required for plans	Not included
Resilience of infrastructure	Not an MS4 focus	Required	Not included
Annual reporting/monitoring	Required for MS4	Not required beyond data submission tied to plans	Not included

Assessing Subdivision Regulations¹²

The Subdivision Regulations have strong development standards and reporting mechanisms. They include a stormwater management report, detailed mapping, and engineering submissions for approval. These support MS4 compliance and among the stronger policy documents incorporating geospatial data. However, they are not as strong with public involvement, discussing vulnerable populations, and emphasizing low impact development. The regulations are effective in requiring documentation and review from projects but could be strengthened by intertwining requirements with environmental goals.

Major Focuses:

- Dictates how subdivisions of land can be formed and requires the approval of Planning and Zoning
- Requires detailed plans for construction and engineering that match Public Improvement Standards and Zoning regulations
- Details application requirements including electronic site plans, a Stormwater Management Report, surveys and maps

Compliances:

MS4:

- Stormwater Management Reports align with the post-construction stormwater controls under MS4
- Highlights and requires erosion control measures
- Requires approval from the commission creates an enforceable mechanism that can ensure compliance supporting the implementation of construction and post-construction stormwater management

PA 25-33:

¹² 2013. *Subdivision Regulations*. Manchester: Town of Manchester.

- Requires electronic submissions of site plans based on CT Geographic Information System standards aligning with PA25-33's geospatial data integration goal

Areas for Improvement:

MS4:

- Does not outline specific quantifiable water quality standards for the town or goals the town may hope to achieve. The MS4 has an emphasis on measurable goals and tracking, specifically for TMDLs. However, the MS4 does not require a standard/goal to be incorporated for developments, but including one in the Subdivision Regulations can help reach general town goals
- Does not limit impervious surface or highlight the climate risks associated with them; the MS4 under Post-Construction Stormwater Management requires reducing runoff and promoting LIDs, thus, to accomplish this, impervious surfaces should be minimized
- Focuses on new subdivisions without emphasis on retrofitting existing stormwater systems which the MS4 encourages municipalities to incorporate under its Post-Construction Stormwater Management section

PA 25-33:

- Lacks climate hazard projections and vulnerability assessments with infrastructure and populations disproportionately impacted
- Does not emphasize designs focusing on resilience, currently focuses on functionality, the PA 25-33 emphasizes the integration of climate resilience into land development standards (avoiding high-risk areas, designing building to withstand long-term climate projections, etc.)

MS4 and PA 25-33:

- Does not reference low impact development or require the use of any nature-based solutions, the Subdivision Regulations only include: "promote the development of land in a way that is sensitive to the environment" (12)¹³

Subdivision Regulations Compliance Chart:

Topic categories selected based on the main ideas presented in MS4 and PA 25-33.

Topic	MS4	PA 25-33	Subdivision Regulations
Stormwater & water quality	Permitted program with BMPs & monitoring	Relating to climate hazards	Requires Stormwater Management Reports but does not include measurable targets for pollutants
Public involvement/education	Required by MS4 permit	Not a specific municipal requirement	Procedural community involvement opportunities at public hearings but does not include an educational program on environmental topics.

¹³ 2013. *Subdivision Regulations*. Manchester: Town of Manchester.

Land use & development	MS4 influences site controls but not broad zoning	Requires climate considerations in municipal planning & zoning	Has a structured approval process that allows for regulatory authority but does not promote low impact development
Climate hazard/risk planning	Indirectly (stormwater affects flood risk)	Required	References flood-risk and drainage but does not include quantifiable climate projections or vulnerable communities
Mapping infrastructure/geospatial data	For stormwater infrastructure & DCIA	Required for plans	Requires detailed electronic site plans that match CT Geographic Information System standards
Resilience of infrastructure	Not an MS4 focus	Required	Establishes standards for engineering but does not require climate resiliency considerations within them
Annual reporting/monitoring	Required for MS4	Not required beyond data submission tied to plans	Does not include long-term monitoring of stormwater only requires approval for development

Assessing Stormwater Management Plan¹⁴

The Stormwater Management Plan is the highest compliance document across categories. It fulfills all of the requirements of MS4 with detailed BMPs, mapping, and annual reporting requirements. Additionally, it includes public outreach and education components. The document focuses on stormwater management, leaving other climate hazards for different policies. It is an effective document for the town's overall planning framework.

Major Focuses:

- Focuses on reducing pollutants in stormwater runoff and promote water quality
- Structured with intention to the MS4 framework using the six MCMs
- Outlines BMPs with goals and timelines for each of the MCMs
- Follows MS4 outline for mapping, reporting, and includes data orientated guidelines

Compliances:

MS4:

- Fully converts the six MCMs
- Includes measurable goals with who to report to and accountability mechanisms
- Includes guidelines for monitoring, requires annual reporting, and outlines mapping
- Discusses public education and outreach with a webpage designed to have useful links, a calendar of events, brochures, permit documents, and contact information easily accessible (currently has an outdated link to the Manchester website however). Also,

¹⁴ Fox, Adam G., and Joseph Magdol. 2004. *Stormwater Management Plan*. Manchester: Town of Manchester.

presents information at “Manchester Matters” and “Government Academy”.
Additionally, outlines goals to implement a stormwater education program in elementary schools

Areas for Improvement:

MS4:

- Could include more information on water quality planned actions, it outlines where the water bodies stand today and future goals, but not specific steps towards water quality improvement

PA 25-33:

- Does not include climate projections and infrastructure as well as community vulnerability
- Focuses on pollution control and does not expand into resilience to climate impact

MS4 and PA 25-33:

- Limited emphasis on green infrastructure and low impact development, while BMPs are listed the SWMP could further prioritize nature-based solutions

Stormwater Management Plan Compliance Chart:

Topic categories selected based on the main ideas presented in MS4 and PA 25-33.

Topic	MS4	PA 25-33	Stormwater Management Plan
Stormwater & water quality	Permitted program with BMPs & monitoring	Relating to climate hazards	Fully aligns with MS4s six MCMs and water quality standards and monitoring
Public involvement/education	Required by MS4 permit	Not a specific municipal requirement	Emphasizes public outreach and education with specific programs outlined
Land use & development	MS4 influences site controls but not broad zoning	Requires climate considerations in municipal planning & zoning	Provides stormwater management framework but could be further integrated with zoning or subdivision regulations
Climate hazard/risk planning	Indirectly (stormwater affects flood risk)	Required	Does not include climate projections or specific vulnerability mapping only references flooding in regard to stormwater system
Mapping infrastructure/geospatial data	For stormwater infrastructure & DCIA	Required for plans	Meets MS4 mapping requirements
Resilience of infrastructure	Not an MS4 focus	Required	Not included

Annual reporting/ monitoring	Required for MS4	Not required beyond data submission tied to plans	Includes annual reporting and monitoring framework with accountability mechanisms
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Assessing Public Improvement Standards¹⁵

The Public Improvement Standards set measurable targets for water quality and incorporate mapping and hydraulic data. They are important in ensuring infrastructure meets outlined standards after a project is proposed. They include historical FEMA data and could grow to discuss future climate projections. Additionally, they require Stormwater Management Plans for future projects. The document is a strong framework for ensuring consistent project standards.

Major Focuses:

- Outlines requirements for public infrastructure (roads, sidewalks, etc.)
- Includes storm drainage system information with details on required Stormwater Management Reports
- Mentions sustainable design and low impact development techniques for projects

Compliances:

MS4:

- Sets quantifiable targets for water quality; Requires 80% removal of annual total suspended solids and floatable debris
- Outlines stormwater management with post-construction stormwater controls and sediment and soil erosion control aligning with MS4 post-construction standards

PA 25-33:

- Includes climate data from FEMA flood studies and historic storm data

MS4 and PA 25-33:

- Outlines low impact development and sustainable design guidelines (but does not make them a requirement)
- Requires mapping in accordance with Planning and Zoning as well as hydraulic models and calculations for all drainage facilities

Areas for Improvement:

PA 25-33:

- Lacks future climate projections and vulnerabilities, does not analyze at-risk infrastructure

¹⁵ Town of Manchester Public Works Department, Town of Manchester Engineering Division. 2020. *Public Improvement Standards*. Manchester: Town of Manchester, Connecticut.

- Does not discuss environmental justice and high-risk communities, or public education and outreach

MS4 and PA 25-33:

- Limited discussion retrofitting infrastructure for long-term resilience
- Does not include public involvement, education programs, or environmental concerns for public infrastructure

Public Improvement Standards Compiled Chart:

Topic categories selected based on the main ideas presented in MS4 and PA 25-33.

Topic	MS4	PA 25-33	Public Improvement Standards
Stormwater & water quality	Permitted program with BMPs & monitoring	Relating to climate hazards	Sets a quantifiable target for water quality and outlines stormwater management
Public involvement/education	Required by MS4 permit	Not a specific municipal requirement	Not included
Land use & development	MS4 influences site controls but not broad zoning	Requires climate considerations in municipal planning & zoning	Applied after planning decisions are made so minimal influence on land use patterns but ensures standards are met once a project is proposed
Climate hazard/risk planning	Indirectly (stormwater affects flood risk)	Required	Uses FEMA data and historical data but does not include future projections or vulnerable communities
Mapping infrastructure/geospatial data	For stormwater infrastructure & DCIA	Required for plans	Incorporates hydraulic mapping and calculations
Resilience of infrastructure	Not an MS4 focus	Required	Outlines standards for functional infrastructure but does not incorporate resilience
Annual reporting/monitoring	Required for MS4	Not required beyond data submission tied to plans	Requires Stormwater Management Reports

Recommendations

Every document serves a different purpose, each of them alone may not fulfill every criteria, but together they cover great amounts of the MS4 and PA 25-33 for Manchester. The POCD and Zoning Regulations guide development, with the Stormwater Management Plan managing pollution, the Public Improvement Standards assist in designing infrastructure, and the Subdivision Regulations support building infrastructure. The largest places for growth include discussing vulnerable populations and environmental justice and incorporating long-term data

projections and assessments. Adding in measurable targets for water quality and climate resilience, requiring nature-based solutions, and using data-driven planning would be high-impact changes for these documents as the town works towards climate goals. Finally, some of these recommendations could act as future projects along UConn Climate Corps students.

Topic	Strengths	Weaknesses	Recommendations
Stormwater & water quality	Alignment with BMPs, MS4 MCM compliance, and has some measurable standards	Lacking quantifiable pollutant reduction targets	Establish town pollutant reduction targets based off TMDLs and tie them into regulatory documents and development approvals
Public involvement/education	POCD and SWMP provide strong public engagement and comply with MS4 outreach programs, and procedural hearings provide engagement in each area	Limited environmental education programs	Develop an interactive webpage on the Manchester website to learn about stormwater, the towns climate goals, climate risks, and actions each resident can take
Land use & development	Strong regulatory authority that clearly depicts approval requirements as well as promotion of multimodal and economic development	Limited requirements to use LIDs or caps on impervious surfaces	Reshape environmental considerations to be required for approval or introduce incentives, such as tax subsidies to promote nature-based infrastructure.
Climate hazard/risk planning	Has general resilience intertwined throughout documents with a focus on flood-risk	Lacks future long-term data, a climate vulnerability assessment, and discussion of high-risk communities	Create a climate vulnerability assessment identifying at-risk areas and communities, then intertwine this data into policy and make it accessible on the town's website
Mapping infrastructure /geospatial data	Includes mapping, hydraulic modeling, and engineering plans as requirements within the documents	Intertwine climate-related mapping into decisions	Integrate geospatial mapping into the POCD and Zoning Regulations to guide approval/denial of projects
Resilience of infrastructure	Establishes engineering and construction standards	Standards focus on functionality, lacking emphasis on climate resilience	Integrate climate resilience as a criteria for construction based on projected climate data, and add retrofitting strategies for existing infrastructure
Annual reporting/monitoring	Requires stormwater reporting and monitoring with a strong framework	N/A	N/A

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