



**NoRo Flood Fight, LLC**

501(c)(4) Non-Profit

**Comprehensive Report:** Why North Royalton Must Pause Major Subdivision Approvals Until It Modernizes Stormwater Management Standards

**Prepared by:** NoRo Flood Fight, LLC

**Date:** June 3, 2025

**Purpose:** To urge the City of North Royalton to halt approvals for major subdivisions, including Ordinance 25-00, until it replaces outdated stormwater models with current climate-adjusted standards to fulfill its legal duty to protect citizens from flooding.

**Presented to:** North Royalton Planning Commission, Storm Water Committee, and Mayor Larry Antoskiewicz



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

## I. Introduction

**NoRo Flood Fight, LLC (NoRoFF)** is a community organization representing North Royalton residents concerned about increased flooding risks due to new developments, such as the proposed 29-lot cluster housing project at 9360 Albion Road (Ordinance 25-00). Our members, including residents within 5 properties adjacent to the site, face potential property damage from stormwater runoff or creek back-up exacerbated by the city's reliance on outdated methodologies. As stakeholders advocating for citizens whose properties are at risk, NoRoFF has standing to address the Planning Commission, Storm Water Committee and Mayor Larry Antoskiewicz under Article III(f) of the Codified Ordinances, which encourages public participation in municipal decisions, and Chapter 1481, which protects property owners from flood-related harm. Residents, particularly those upstream (e.g., Oakridge Estates) and downstream (e.g., Pamela Drive), fear property damage from stormwater runoff exacerbated by the city's reliance on outdated methodologies, such as the 1986 Soil Conservation Service Technical Release No. 55 (TR-55) and 1992 Rainfall Frequency Atlas of the Midwest (Bulletin 71). These models fail to account for current and worsening climate conditions, underestimating flood risks and violating the city's legal obligations under its Codified Ordinances.

This report argues that:

- North Royalton's ordinances impose a clear duty to prevent new developments from increasing flood damage to private property.
- The city's use of outdated stormwater models fails to meet the mandated 100-year storm standard, risking harm to residents.
- Modern, climate-adjusted standards are widely adopted and feasible for implementation.
- Failure to update standards exposes the city to significant legal and financial liabilities.
- Immediate action, including a moratorium and ordinance amendments, is required to protect citizens.

The report concludes with recommended actions and urging compliance with the city's legal duties.



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

## II. Legal Duty to Prevent Flood Damage

### A. North Royalton Codified Ordinances

North Royalton's Codified Ordinances establish a statutory obligation to prevent new developments from causing flood-related harm to upstream and downstream properties. Key provisions include:

- Chapter 1481: Storm Water Management
  - Purpose (§ 1481.01(a)): The chapter aims to “permit development without increasing the flooding of other lands” and ensure the “long-term adequacy of storm drainage systems” while protecting the “rights of both contributing and receiving property owners.”  
Source: North Royalton Codified Ordinances, Chapter 1481, American Legal Publishing,  
[https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton\\_oh/0-0-0-3845](https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton_oh/0-0-0-3845)
  - 100-Year Storm Standard (§ 1481.01(c)(1)): Post-development peak runoff rates for 1- to 100-year, 24-hour storms must not exceed pre-development rates at each discharge point.
  - Emergency Drainage (§ 1481.06(a)): Subdivision facilities must include emergency drainageways for up to 100-year storms to prevent structural damage and ensure public safety.
  - Enforcement (§ 1481.99): Violations are first-degree misdemeanors, with fines up to \$1,000/day and jail time. The city can issue stop-work orders (§ 1481.006) or seek injunctive relief (§ 1481.99(b)).
- Related Chapters
  - Chapter 1466: Flood Damage Reduction: Aligns with FEMA regulations to minimize flood losses through floodplain permits and mitigation (§ 1466.01).  
Source:  
[https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton\\_oh/0-0-0-3477](https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton_oh/0-0-0-3477)



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

- Chapter 1492: Riparian and Wetland Setbacks: Protects natural areas to reduce runoff, with variances requiring mitigation (§ 1492.06).  
Source: [https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton\\_oh/0-0-0-3923](https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton_oh/0-0-0-3923)
- Chapter 1286: Subdivision Regulations: Mandates stormwater systems designed per TR-55, routing 100-year storms to safe outlets (§ 1286.14).
- Zoning and Planning Provisions (Article XII)
  - Planning Commission Powers (§ 1270.01): The Commission must ensure subdivisions align with “harmonious development” and flood prevention, coordinating plat reviews.
  - Zoning Changes (Article XII(g)): Density increases or zoning changes for multi-family housing require voter approval at a general election.  
Source: [https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton\\_oh/0-0-12-1](https://codelibrary.amlegal.com/codes/northroyalton/latest/northroyalton_oh/0-0-12-1)

## B. Implication

These provisions create a clear duty for city officials, including the Mayor, Council, and Planning Commission, to deny or condition subdivisions like the Albion Road project if they risk increased runoff flooding. Failure to comply violates the ordinances’ intent to protect property rights and public safety.

## C. Supporting Case Law

- Mansfield v. Balliett, 65 Ohio St. 451 (1901): Established that municipalities can be liable for nuisance when their actions (e.g., inadequate drainage) cause flooding on private property.  
Source: <https://case-law.vlex.com/vid/city-of-mansfield-v-900521943>
- State ex rel. Doner v. Zody, 130 Ohio St.3d 446 (2011): Held that repetitive flooding from public infrastructure can constitute a taking, requiring compensation under the Ohio Constitution.  
Source: <https://www.supremecourt.ohio.gov/rod/docs/pdf/0/2011/2011-Ohio-6117.pdf>
-



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

### III. Outdated Stormwater Models Undermine Flood Protection

#### A. Current Methodologies

North Royalton's stormwater management relies on outdated models that fail to meet the 100-year storm standard:

- Hydrologic Model: § 1481.10(c) mandates TR-55 (1986 or latest edition) with Type II rainfall distribution. TR-55 is a single-event model designed for historical conditions, not dynamic climate scenarios.  
Source: USDA NRCS, TR-55 Manual, <https://nationalstormwater.com/urban-hydrology-for-small-watersheds-tr-55/>
- Rainfall Data: § 1481.05(c)(2) specifies intensities (e.g., 2.25 in/hr for 50-year, 15-minute storm; 2.50 in/hr for 100-year) and § 1481.01(i) lists depths (e.g., 5.89 in for 100-year, 24-hour storm), sourced from the 1992 Rainfall Frequency Atlas of the Midwest (Bulletin 71).  
Source: Huff & Angel, Bulletin 71, <https://www.isws.illinois.edu/pubdoc/B/ISWSB-71.pdf>

#### B. Comparison to Modern Data

Modern studies show North Royalton's data significantly underestimates flood risks:

- NOAA Atlas 14 (2018): For Cuyahoga County, it estimates:
  - 100-year, 15-minute storm: ~4.0 in/hr (vs. city's 2.50 in/hr).
  - 100-year, 24-hour storm: ~7.0 in (vs. city's 5.89 in).  
Source: NOAA Hydrometeorological Design Studies Center, [https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=oh](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=oh)
- Climate Change Trends:
  - U.S. EPA reports a 37% increase in very heavy precipitation (top 1% of events) in the Midwest from 1958 to 2016.  
Source: EPA, Climate Change Indicators: Heavy Precipitation, <https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation>



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

- IPCC projects 10–20% increases in extreme rainfall by 2070 in the Midwest.  
Source: IPCC AR6, Chapter 11,  
[https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_11.pdf)
- Northeast Ohio Regional Sewer District (NEORS D) confirms increased storm intensity in urban areas like North Royalton, with events like the July 2019 storm (6 inches in 24 hours) exceeding Bulletin 71 predictions.  
Source: NEORS D, Stormwater Management Program,  
<https://www.neorsd.org/stormwater/stormwater-management-program>

### C. Consequence

Using TR-55 with Bulletin 71 data results in undersized detention basins and sewers, increasing runoff to upstream (e.g., Oakridge Estates) and downstream (e.g., Pamela Drive) properties. This violates § 1481.01(a–c) by failing to prevent flooding and protect property rights, as evidenced by resident reports of flooding during the 2019 storm.



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

## IV. Modern Standards North Royalton Must Adopt

### A. Best Practices

North Royalton lags behind regional and state standards that ensure robust flood protection:

- NOAA Atlas 14 (2018): Updated precipitation frequency curves, adopted by:
  - Ohio EPA for NPDES permits.  
Source: Ohio EPA, Construction General Permit, <https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/storm-water-discharges-from-small-and-large-construction-activities--general-permit>
  - Ohio Department of Transportation (ODOT) for drainage design.  
Source: ODOT, Location and Design Manual, <https://www.transportation.ohio.gov/working/engineering/roadway/manuals-standards/location-design-vol-1>
  - FEMA for floodplain mapping.  
Source: FEMA, Flood Map Service Center, <https://msc.fema.gov/portal/home>
- Ohio Rainwater and Land Development Manual (2018): Mandates NOAA Atlas 14 and continuous-simulation models for state-funded projects, cited by Cuyahoga County.  
Source: Ohio EPA, <https://epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/rainwater-and-land-development>; Chagrin River Watershed Partners, <https://crwp.org/>
- WinTR-55 (2009) and HEC-HMS 4.x:
  - WinTR-55 updates TR-55's engine, supporting NOAA Atlas 14 inputs.  
Source: USDA NRCS, <https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/water/nrcs-hh-tools-models>
  - HEC-HMS (USACE) models complex watersheds with climate scenarios, used by Ohio Department of Natural Resources (ODNR).  
Source: USACE, <https://www.hec.usace.army.mil/software/hec-hms>
- NEORSO Stormwater Rules: Require designs based on NOAA Atlas 14, setting a precedent for Cuyahoga County.  
Source: NEORSO, Stormwater Management Code,



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

[https://neorsd.org/Information/Library.php?SOURCE=library/Title%20Stormwater-Management-Code July-19-2012.pdf&a=download\\_file&LIBRARY\\_RECORD\\_ID=4274](https://neorsd.org/Information/Library.php?SOURCE=library/Title%20Stormwater-Management-Code%20July-19-2012.pdf&a=download_file&LIBRARY_RECORD_ID=4274)

## B. Climate Integration

Modern models allow incorporation of climate projections (e.g., 10–20% rainfall increase by 2070), ensuring compliance with § 1481.01(c)'s 100-year standard. For example, WinTR-55 can adjust rainfall depths, and HEC-HMS supports ensemble climate scenarios.

## C. Feasibility

These standards are publicly available and can be incorporated into Chapter 1481 via ordinance amendment, aligning North Royalton with regional best practices and reducing liability.





NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

## V. Legal and Financial Risks of Inaction

### A. Legal Liabilities

Approving subdivisions like Ordinance 25-00 with outdated models violates Chapter 1481 and exposes the city to:

- Administrative Appeals (Ohio Revised Code § 2506.01): Residents can appeal Planning Commission or Council approvals as arbitrary or capricious if based on deficient stormwater plans.  
Source: <https://codes.ohio.gov/ohio-revised-code/section-2506.01>  
Case Law: Dudukovich v. Lorain Metro. Hous. Auth., 58 Ohio St.2d 202 (1979) (courts can reverse administrative decisions lacking substantial evidence).  
Source: <https://case-law.vlex.com/vid/dudukovich-v-lorain-metropolitan-886732206>
- Tort Liability and Nuisance Claims (R.C. § 2744.02(B)(2)): Municipal immunity is waived for negligent performance of proprietary functions like stormwater management. Flood damage could trigger nuisance claims.  
Case Law: Mansfield v. Balliett (supra); Englewood v. Turner, 178 Ohio App.3d 179 (2008) (city liable for flooding from inadequate drainage).  
Source: <https://case-law.vlex.com/vid/city-of-mansfield-v-900521943> ;  
<https://law.justia.com/cases/ohio/second-district-court-of-appeals/2008/2008-ohio-4637.html>
- Takings Actions: Repetitive flooding from undersized infrastructure may constitute a taking.  
Case Law: State ex rel. Doner v. Zody (supra). Source:  
<https://www.supremecourt.ohio.gov/rod/docs/pdf/0/2011/2011-Ohio-6117.pdf>
- Injunctive Relief: NoRoFF can seek injunctions to halt development pending updated studies (§ 1481.99(b)).  
Case Law: State ex rel. Pizza v. Rezcallah, 84 Ohio St.3d 116 (1998) (injunctions appropriate for ordinance violations).  
Source: <https://law.justia.com/cases/ohio/supreme-court-of-ohio/1998/1998-ohio-313.html>
- Mandamus Actions: A writ of mandamus can compel the city to update its stormwater study, enforcing § 1481.01(a).



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

Case Law: State ex rel. Shemo v. Mayfield Hts., 95 Ohio St.3d 59 (2002) (mandamus for municipal duty enforcement).

Source: <https://www.supremecourt.ohio.gov/rod/docs/pdf/0/2002/2002-Ohio-1627.pdf>

## B. Financial Risks

- Litigation Costs: Defending appeals, tort claims, or takings actions could cost hundreds of thousands in legal fees and settlements.
- Infrastructure Repairs: Undersized stormwater systems may require costly retrofits if flooding occurs.
- FEMA Compliance: Failure to align with NOAA Atlas 14 risks FEMA floodplain map disputes, affecting insurance rates and federal funding.

Source: FEMA, National Flood Insurance Program, <https://www.fema.gov/flood-insurance>

## C. Reputational Damage

Ignoring resident concerns undermines public trust, risking political consequences and community unrest, as evidenced by NoRoFF's growing membership.



---

## VI. Recommended Actions for the City

To fulfill its legal duty and protect citizens, North Royalton must take the following actions:

- Impose an Immediate Moratorium
  - Halt all subdivision approvals, including Ordinance 25-00, relying on Bulletin 71 or TR-55 with outdated rainfall data, as authorized by § 1481.99(c).
  - Rationale: Prevents harm while updating standards, aligning with § 1481.01(a).
- Adopt Emergency Ordinance Amendments
  - Update Chapter 1481 to mandate:
    - NOAA Atlas 14 rainfall data.
    - Ohio Rainwater and Land Development Manual (2018) criteria.
    - Climate-adjusted models (e.g., WinTR-55 or HEC-HMS with 10–20% rainfall increase scenarios).
  - Rationale: Ensures compliance with § 1481.01(c)'s 100-year standard and regional best practices.
- Require Developer Resubmission
  - Mandate that all pending plats, including Albion Road, be remodeled with NOAA Atlas 14 and modern hydrology to verify 100-year compliance.
  - Rationale: Corrects deficient stormwater plans, protecting upstream/downstream properties.
- Collaborate with Regulatory Agencies
  - Engage NEORSD, Ohio EPA, and FEMA to update the city's stormwater study, as encouraged by § 1492.13.
  - Request NEORSD technical review of Ordinance 25-00's stormwater plan.



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

- Rationale: Leverages expertise to develop a Local Flood Risk Management Strategy.
- Enhance Public Participation
  - Hold public hearings (Article III(f)) to review stormwater concerns.
  - Support NoRoFF's "Flood Memory Archive" ([norofloodfight.org](http://norofloodfight.org)) to document resident flood experiences (e.g., 2019 storm video provided at the last meeting on the Albion Road Development rezoning meeting.).
  - Rationale: Ensures informed decision-making and community trust.
- Promote Green Infrastructure
  - Amend § 1492.06 to require nature-based solutions (e.g., wetland restoration, rain gardens) in new developments.
  - Rationale: Reduces runoff and enhances resilience, aligning with NoRoFF's goals.

---

## VII. Conclusion

North Royalton's reliance on TR-55 and Bulletin 71 violates its legal duty under Chapter 1481 to prevent new developments from increasing flood risks. Modern standards like NOAA Atlas 14 and the Ohio Rainwater and Land Development Manual are essential to protect residents upstream and downstream of projects like the Albion Road development. Failure to act exposes the city to administrative appeals, tort liability, takings claims, and reputational damage. By implementing the recommended actions, North Royalton can fulfill its obligations, mitigate flood risks, and restore public trust.



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

---

## Sources Cited

- North Royalton Codified Ordinances: <https://codelibrary.amlegal.com/codes/northroyalton/latest/overview>
- USDA NRCS, TR-55: <https://nationalstormwater.com/urban-hydrology-for-small-watersheds-tr-55/>
- Bulletin 71: <https://www.isws.illinois.edu/pubdoc/B/ISWSB-71.pdf>
- NOAA Atlas 14: [https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=oh](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=oh)
- EPA, Heavy Precipitation: <https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation>
- IPCC AR6: [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_11.pdf)
- NEORSRD, Stormwater Program: <https://www.neorsd.org/stormwater/stormwater-management-program>
- Ohio EPA, Construction General Permit: <https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/storm-water-discharges-from-small-and-large-construction-activities--general-permit>
- ODOT, Location and Design Manual: <https://www.transportation.ohio.gov/working/engineering/roadway/manuals-standards/location-design-vol-1>
- FEMA, Flood Map Service Center: <https://msc.fema.gov/portal/home>
- Ohio Rainwater and Land Development Manual: <https://epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/rainwater-and-land-development>
- Chagrin River Watershed Partners: <https://crwp.org/>
- USDA NRCS, WinTR-55: <https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/water/nrcs-hh-tools-models>



NoRo Flood Fight, LLC  
501(c)(3) Non-Profit

- USACE, HEC-HMS: <https://www.hec.usace.army.mil/software/hec-hms>
- NEORS, Stormwater Management Code:  
[https://neorsd.org/1\\_Library.php?SOURCE=library/Title%20V\\_Stormwater-Management-Code\\_July-19-2012.pdf&a=download\\_file&LIBRARY\\_RECORD\\_ID=4274](https://neorsd.org/1_Library.php?SOURCE=library/Title%20V_Stormwater-Management-Code_July-19-2012.pdf&a=download_file&LIBRARY_RECORD_ID=4274)
- Mansfield v. Balliett: <https://case-law.vlex.com/vid/city-of-mansfield-v-900521943>
- State ex rel. Doner v. Zody:  
<https://www.supremecourt.ohio.gov/rod/docs/pdf/0/2011/2011-Ohio-6117.pdf>
- Dudukovich v. Lorain Metro. Hous. Auth.: <https://case-law.vlex.com/vid/dudukovich-v-lorain-metropolitan-886732206>
- Englewood v. Turner: <https://law.justia.com/cases/ohio/second-district-court-of-appeals/2008/2008-ohio-4637.html>
- State ex rel. Pizza v. Rezcallah: <https://law.justia.com/cases/ohio/supreme-court-of-ohio/1998/1998-ohio-313.html>
- State ex rel. Shemo v. Mayfield Hts.:  
<https://www.supremecourt.ohio.gov/rod/docs/pdf/0/2002/2002-Ohio-1627.pdf>
- Ohio Revised Code § 2506.01: <https://codes.ohio.gov/ohio-revised-code/section-2506.01>
- FEMA, National Flood Insurance Program: <https://www.fema.gov/flood-insurance>