Overview

• Digital Floodplain Mapping today
• Emerging Mapping and Data Products
• What we’ve Learned to date
• Data Governance Framework that will help ensure that our Flood Risk Data and Communication Products are Relevant, Trusted, Maintained and Available
Current “Floodplain Data” Products

Ensure the alignment of our communications with the goals, objectives and priorities of our strategic plan.
A Key Driver - Planning and Regulations
And where is the Floodplain Data?
Downloading Floodplain Mapping Data

Grand River Conservation Authority maintains a collection of data layers for its geographic information system (GIS). You can download GRCA’s GIS data directly from our data catalogue. Refer to the “Licence” column in the data list for details on use constraints for each individual layer.

GIS Data Catalogue

By accessing or downloading any data or third-party data, you agree to be bound by the associated licence. Information on GRCA’s data policies and licences can be found on the Licensing page.

<table>
<thead>
<tr>
<th>Name</th>
<th>Last Update</th>
<th>Licence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Floodplain</td>
<td>2016.09.25</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Regulation Limit Ontario Regulation 186/06</td>
<td>2016.09.25</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Rain Gauge Stations</td>
<td>2015.08.27</td>
<td>GRCA Standard Data Licence v3</td>
</tr>
<tr>
<td>Rail Trail Points of Interest</td>
<td>2007.01.05</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Rail Trail</td>
<td>2007.01.05</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Parks</td>
<td>2016.08.11</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Nature Centres</td>
<td>2013.06.30</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Municipal Boundaries 1.5</td>
<td>2013.06.10</td>
<td>GRCA Open Data Licence v2</td>
</tr>
<tr>
<td>Land Cover 1991</td>
<td>1999.03.03</td>
<td>GRCA Open Data Licence v2</td>
</tr>
</tbody>
</table>

More Information

Learn more about the data available from GRCA and find related resources.

Licensing Details

External Resources

Floodplain

Regulatory flood line mapping defines the 100-year storm event for lakes and rivers in the region. Predicted high water levels and historical observations from Hurricane Hazel can be used to estimate risk.
Why not More?

Ensure the alignment of our communications with the goals, objectives and priorities of our strategic plan.
Emerging Flood Mapping and Flood Data Products
Flood Frequency Mapping

10-Year Flood (10% Flood)

Courtesy of Cathy Maniego, Alberta Environment and Parks
Dam Break Flood Mapping

PMP - Probable Maximum Precipitation
The Good News going forward…
Better Input Data!
Better Tools!
Lower Costs!
More and Better Outputs!
Have we fallen short?

What have we learned and how do we improve the odds of success?
Data is an Asset
Data Governance

Data Policies

Data Quality

Data Stewardship

Data Products are defined
Data are trusted
People are accountable
Data are available
Risks are managed

Regulatory Compliance

Risk Management

Business Policies
Define the Product
Define the Product

The “Flood Frequency” Product
The “Flood Zone” Product
The “Flood Risk” Product
The “Flood Depth” Product…
Define the Product - “Consider the Needs”

Emergency Planning

Emergency Response
Define the Product - Consider the “Audiences”

Personalized experience.
Local context.
Historical context.
Legend legibility.
Flood zone legibility.
Explanation of technical terms
Risk reduction advice.
Transparency about limitations and uncertainty.
Depiction of multiple flood hazards.
### Define the Product - Develop Documentation

**Name: Regulatory Floodplain**

**General Description**

- **Full Name:** FLOODPLAN
- **Abstract:** A floodplain is an area, generally along a stream or watercourse, that is subject to flooding. The floodplain layer has been developed to contain floodplain information which has been determined through engineered floodplain mapping studies, observed occurrences of flooding, or estimated based on mapping, aerial photography, and field observations. The floodplain layer depicts the regulatory floodplain which is the greater of the 100 year flood or Regional Flood (based on hurricane impact risk). The intended use of this layer is to assist in implementation of floodplain management responsibilities in land use planning exercises and applications, CA regulations, land use designations in official plans, and flood emergency awareness, warning, and response.

**Geospatial and Accuracy**

- **Horizontal Datum:** North American Datum 1983 (NAD83 - 1997)
- **Vertical Datum:** NAVD 1988 (NAD83 - 1997)
- **Horizontal Projection:** State Plane North Central 17th (NAD83 - 1997)
- **Vertical Accuracy:** Meets by governments

**Data Sources and Rights**

- **Access Code:** GRCA Open Data License v2
- **User Code:** None
- **License:** Product using information under License with Grand River Conservation Authority © Grand River Conservation Authority, 2021-1st edition year of publication (GRCA)
- **Publisher:** Grand River Conservation Authority (GRCA)
- **Distribution:** Grand River Conservation Authority (GRCA)
- **Online Link:** https://data.grandriver.ca/download masturbation

**Methodology**

Estimated Floodplains: Derived in areas with limited detailed mapping and analysis in the absence of engineered floodplain information. Estimated floodplains identify areas of concern with respect to flooding from an extreme flood event and are as a flag to trigger a more rigorous review or analysis of the actual extent of floodplains as required. The estimated lines are developed using GRCA criteria including drainage area, valley characteristics, and backwater conditions. Based on local available information including field inspection, mapping, aerial photography to the extent practicable for the project for which it was developed. Estimated floodplains are typically digitized or created from ODM.

**Attributes**

- **Full Name (Type):** OBJECTID (Long Integer)
- **Area Name:** Description and Values
- **Update History (Last 6):**
  - Sep 10, 2019: System update - Data Site specific updates
  - Jul 23, 2019: System update - Schema Added additional Policy Area names to domain
  - Jun 29, 2019: System update - Data Site specific updates
  - Jun 29, 2019: System update - Data Site specific updates
  - Jun 13, 2019: System update - Data Site specific updates
  - Jun 10, 2019: System update - Data Site specific updates

**Contact Information**

- **System Manager:** Water Resources Engineer

---

*Copyright © 2019 Grand River Conservation Authority (GRCA)*

*Use is subject to GRCA’s website Terms of Use.*
Subject Matter Expert is accountable for Data maintenance
Make the Data Available to Others

Access to Data

…where knowledge is freely shared
Data Access - Consider Web Services

Grand River Information Network
Search GRIN...

Data, Web Services, and Applications

Downloads
GRCA maintains a collection of data available for download. This includes GIS, river and climate monitoring, and other datasets that are frequently requested.

Web Services
Web services and APIs provide developers the tools to build great applications while connecting our information directly into your applications.

Applications
Applications built by our team at GRCA which allow you to visualize data, generate maps, and plot interactive charts.
Manage Risk

- Copyright Act
- Risk Mitigation
Understand Your Insurance Coverage.

“Errors and Omissions”
“Commercial General Liability”
Review your Risk Management and Risk Mitigation Strategy with your Insurer.
Summary

- Digital Floodplain Mapping
  - it’s happening
- it’s evolving
- We’ve Learned a lot
- We can and must ensure that our Flood Risk Data and Communication Products are Relevant, Trusted, Maintained and Available
Thank You!

George Sousa, P.Eng.
gsousa@grandriver.ca
@george_sousa