

CSA PLUS 4013:19, Development, interpretation, and use of rainfall intensity-duration-frequency (IDF) information: Guideline for Canadian water resources practitioners

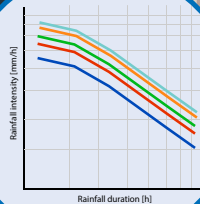
As a result of climate change, Canadians see increased frequency and intensity of rainfall events across the country. This poses a significant challenge for communities. Older water infrastructure lacks the capacity to handle the excessive amount of rain, while the design of new infrastructure requires regional rainfall projections that account for climate impacts. CSA Group Technical Guide CSA PLUS 4013:19 aims to help address the need for better data in water system planning.

The guide helps users understand the derivation of intensity-duration-frequency (IDF) data that describe the frequency of extreme rainfall events of various rates and durations, and how to apply them in planning and design of water systems, considering the changing climate.

More accurate data for infrastructure planning

METEOROLOGICAL DRIVERS

of extreme rainfall events as an important factor in designing rainfall data networks, interpreting regional climate trend analyses, and the practical planning and design of water systems



DERIVATION OF IDF VALUES

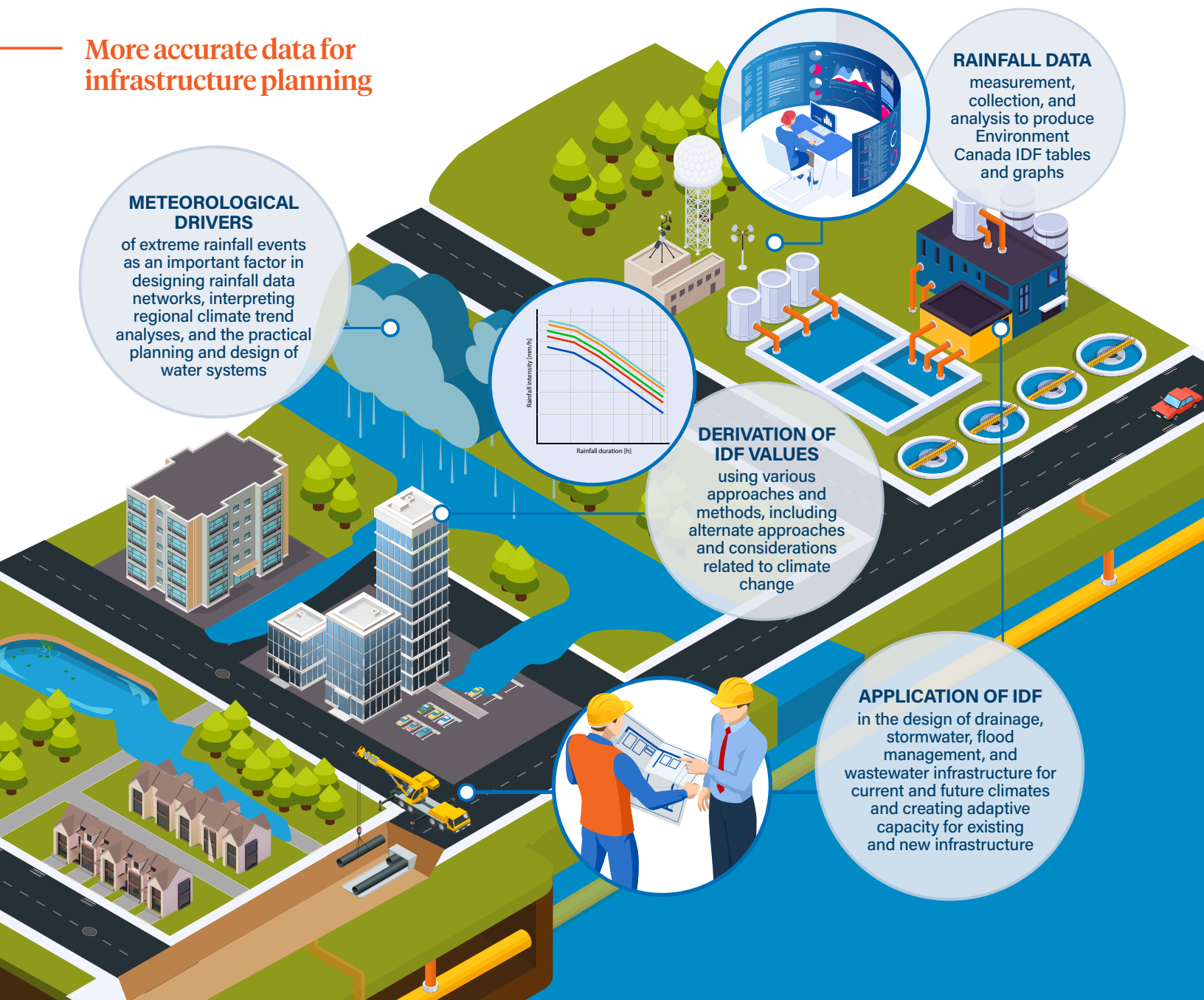
using various approaches and methods, including alternate approaches and considerations related to climate change

RAINFALL DATA

measurement, collection, and analysis to produce Environment Canada IDF tables and graphs

APPLICATION OF IDF

in the design of drainage, stormwater, flood management, and wastewater infrastructure for current and future climates and creating adaptive capacity for existing and new infrastructure



Use the CSA PLUS 4013:19 Technical Guide to gain:

Who should use the Guide?

Professionals with a role in stormwater, drainage, wastewater, and flood management systems

- planning
- design
- management
- inspection
- regulation



A single source access

to approaches, methodologies, assumptions, and limitations related to the collection of rainfall IDF data and derivation of IDF values



A basic understanding

of meteorological processes that generate extreme rainfalls to determine and meet local needs



Guidance

to determine if additional precipitation information is required to optimize the local design of infrastructure

How can this Guide help?

Understand the derivation and application of IDF data to

- generate new or enhance IDF information
- sustainably manage water infrastructure
- adapt to climate change impacts
- educate engineers and other professionals



Recommendations

for design and implementation of an enhanced precipitation network, including gauging needs and data requirements



Considerations

of the climate change implications for the development, interpretation, and use of rainfall IDF information



Insights and best practices

for using IDF in water resources infrastructure planning, design, management of risks, and sustainability

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For more on CSA Group research and standards for improved flood resilience of communities, visit csagroup.org/FloodResilience



This work was funded by the Standards to Support Resilience in Infrastructure Program at the Standards Council of Canada (SCC). For more on what SCC is doing to address climate resilient infrastructure, visit the [Climate and Sustainability](#) web page.