TOGETHER, PUTTING DATA TO WORK

Data and Analytics @ York Region

Data, Analytics and Visualization Services

Prepared for: State of Alaska

November 5, 2020

York Region

ABOUT THE SPEAKERS

John Houweling

Director

Data, Analytics and

Visualization Services Branch

York Region

Jeff Lamb

Manager, Partnerships

Data, Analytics and

Visualization Services Branch

York Region

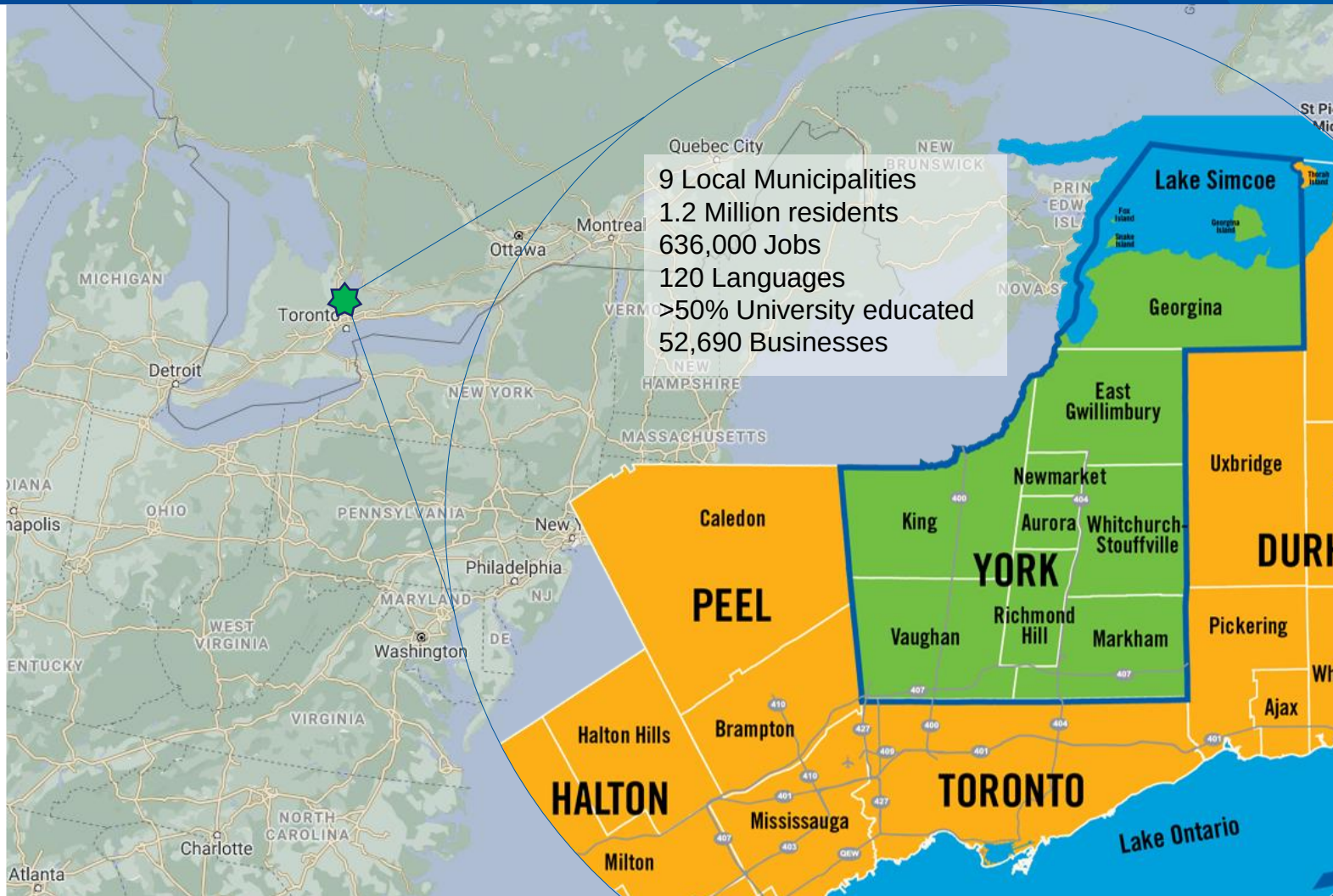
THE FOCUS OF OUR PRESENTATION TODAY

- A little about us
- Our internal focus: Data & Analytics Master Plan
- Our external focus: YorkInfo D.A.T.A. Co-op
- What's next?

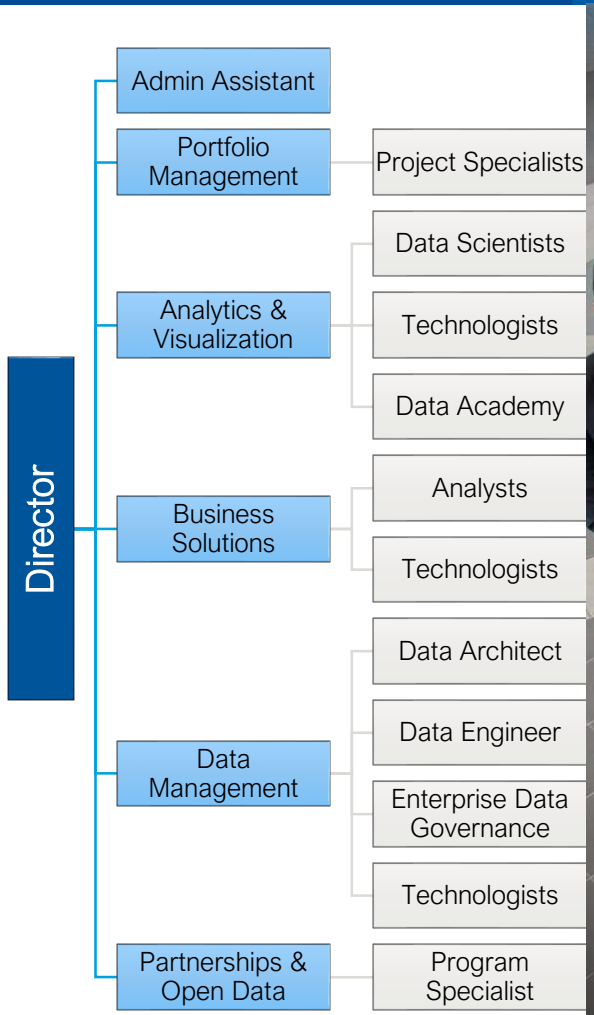
YORK REGION

ABOUT YORK REGION

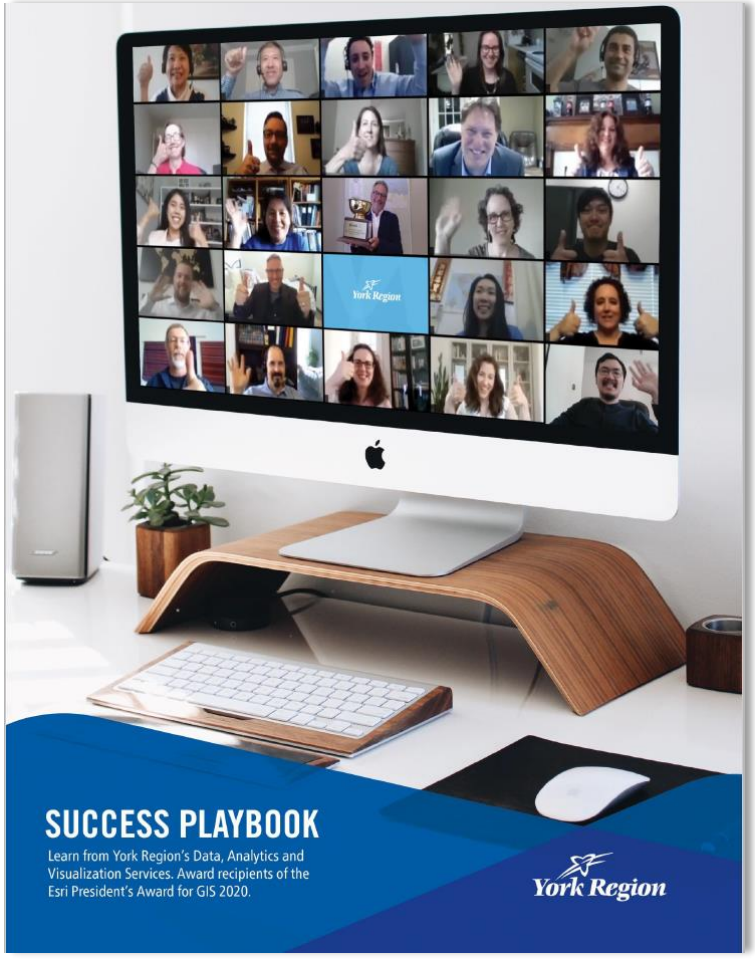
- Transit
- Waste Management
- Water
- Public Health
- Regional Roads
- Social Assistance
- Paramedic Services
- Planning
- Police Services
- Forestry
- Housing Services
- Long-term Care / Senior Services
- Children's Services
- Court Services
- Economic Development



ABOUT THE TEAM



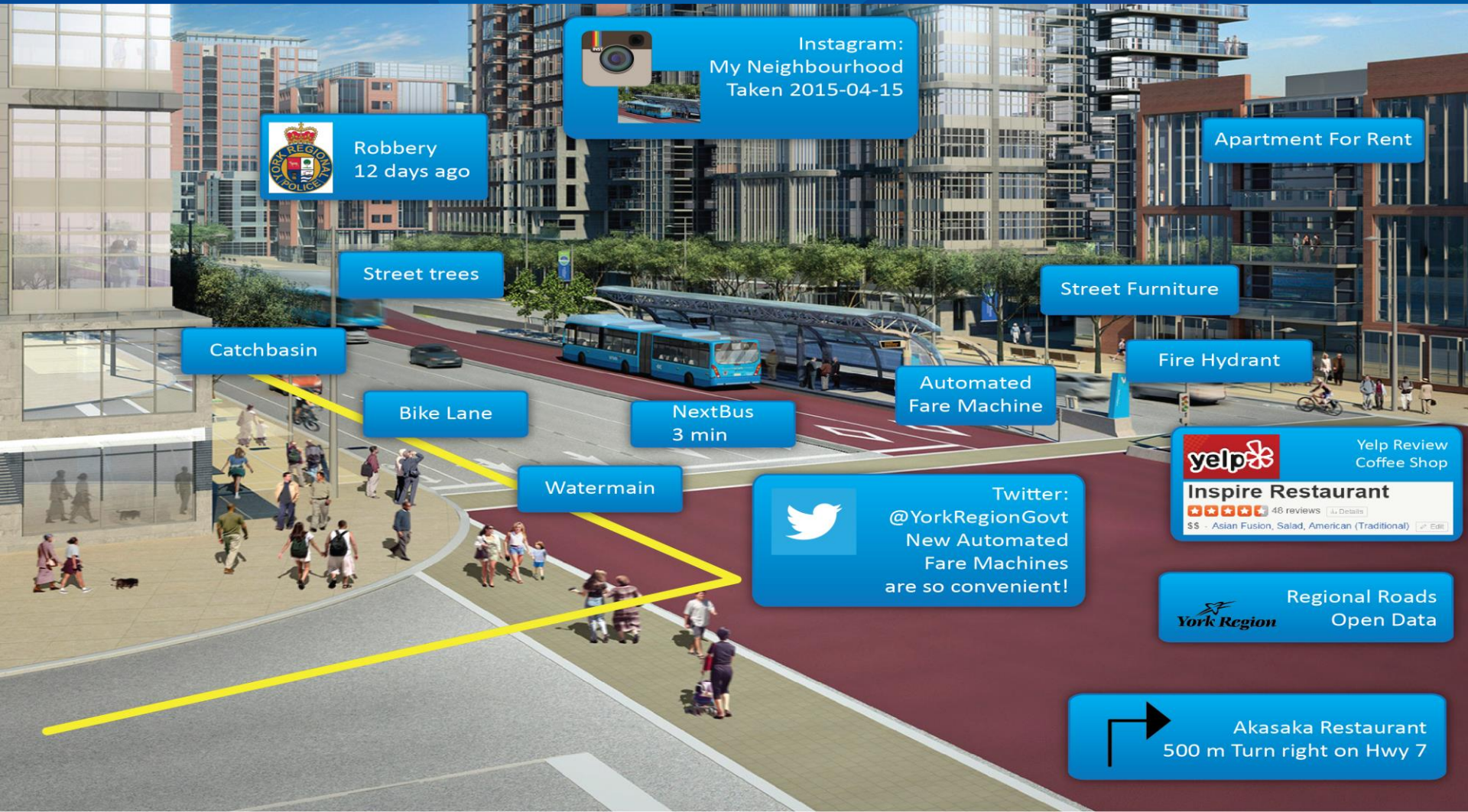
EVOLVING MANDATE: FROM GIS TO DATA AND ANALYTICS



- 1995 to 2011 - GIS in Planning Dept.
- 2012 - Branch GIS Multi-Year Plan
- 2015 - Branch Data and Analytics Plan
- 2019 - Corporate Data & Analytics Master Plan

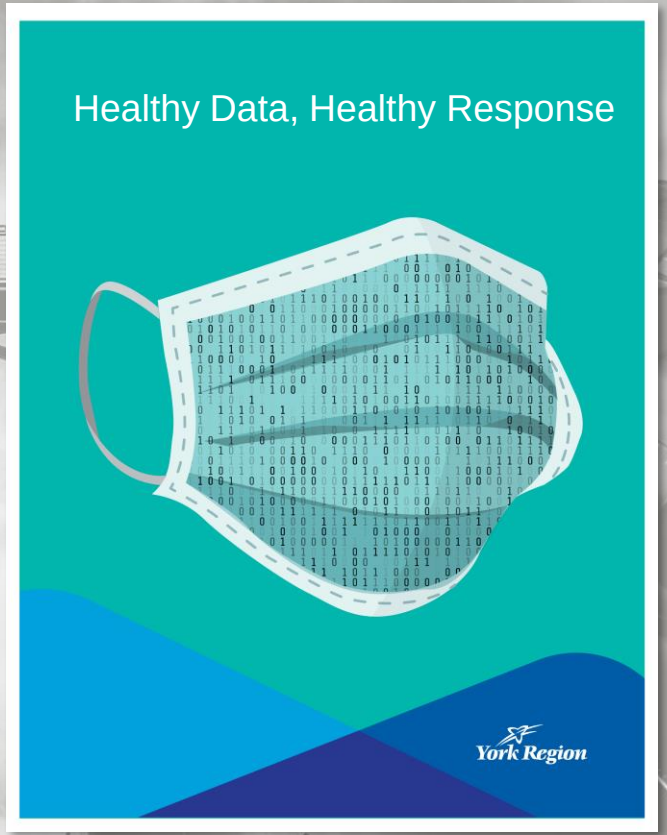
Download our story here

GOVERNMENTS GENERATE A LOT OF DATA!



ARE WE GETTING THE MOST FROM THESE DATA?

- Work in a "federated model"
- “BI and GIS Show and Tell”
- Departments building vertical views
- No clear accountability and authority
- Lots of duplication and confusion
- Many use cases require horizontal view



demo

DATA AND ANALYTICS MASTER PLAN

ALL LEVELS OF GOVERNMENT ALIGNING

Download

Download

Download

TOGETHER, PUTTING DATA TO WORK!

We will be successful, over the next 4 years, as we:

CULTURE

1 Build a Data Informed Culture

Foster an organizational culture that supports data informed activities and outcomes.

GOVERNANCE

2 Establish Governance

Establish and adopt horizontal and vertical governance, with clear accountability.

LITERACY

3 Enhance Capabilities and Literacy

Provision access to training and adoption tactics to promote and enhance data literacy.

ACCESS

4 Provide Access to Trusted and Timely Data

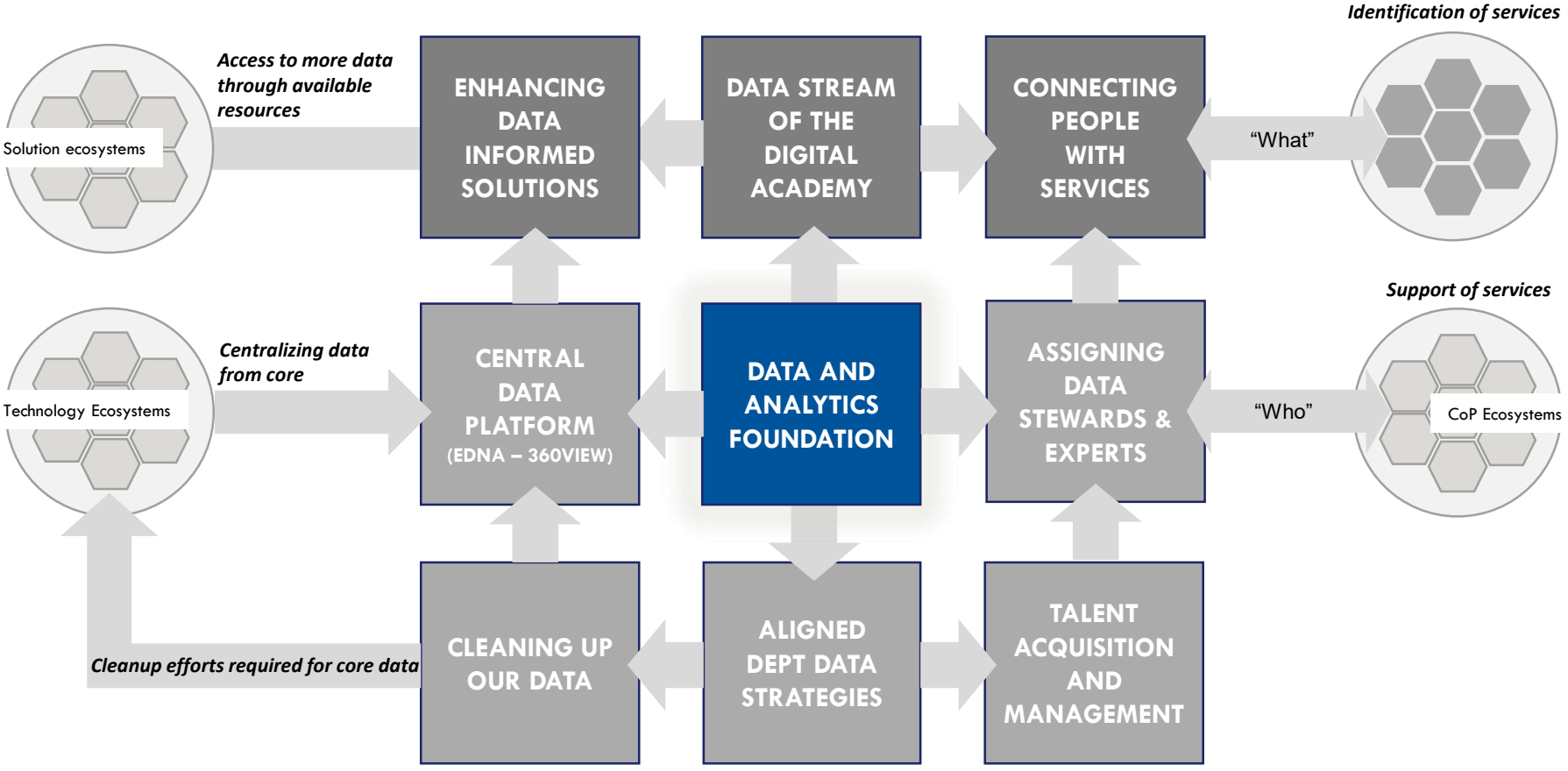
Provide appropriate access to the right data at the right time to support decision-making.

SELF SERVICE

5 Provision Tools for Self-Service Data and Analytics

Equip staff with access to tools for self-service analytics

FRAMEWORK FOR BUILDING THE FOUNDATION



COMPONENTS OF DNA: DAMA's KNOWLEDGE AREAS

Guiding | Primary | Secondary

DATA GOVERNANCE 1.8

Ensuring a framework of rules and practices for data

DATA ARCHITECTURE 2.9	DATA CATALOGUE 1.9	DATA INSIGHTS & REPORTING 2.4	DATA LITERACY 2.2	DATA PARTNERSHIPS 2.4
Modelling data to extract its greatest value	Helping staff find the right data	Using data to tell a compelling narrative	Learning to care for, understand and use data	Learning, building and sharing together.

DATA PREPARATION & INTEGRATION 2.8	DATA QUALITY 1.9	SECURITY, ACCESS & PRIVACY 2.4	TECHNOLOGY 3.0	CONTENT MANAGEMENT
Getting data into the Region's systems	Getting the right data the first time	Keeping data safe and secure	Building an environment for data to thrive	Ensuring integration between data and content

1 - Non-Existent: The functionality does not exist within the organization

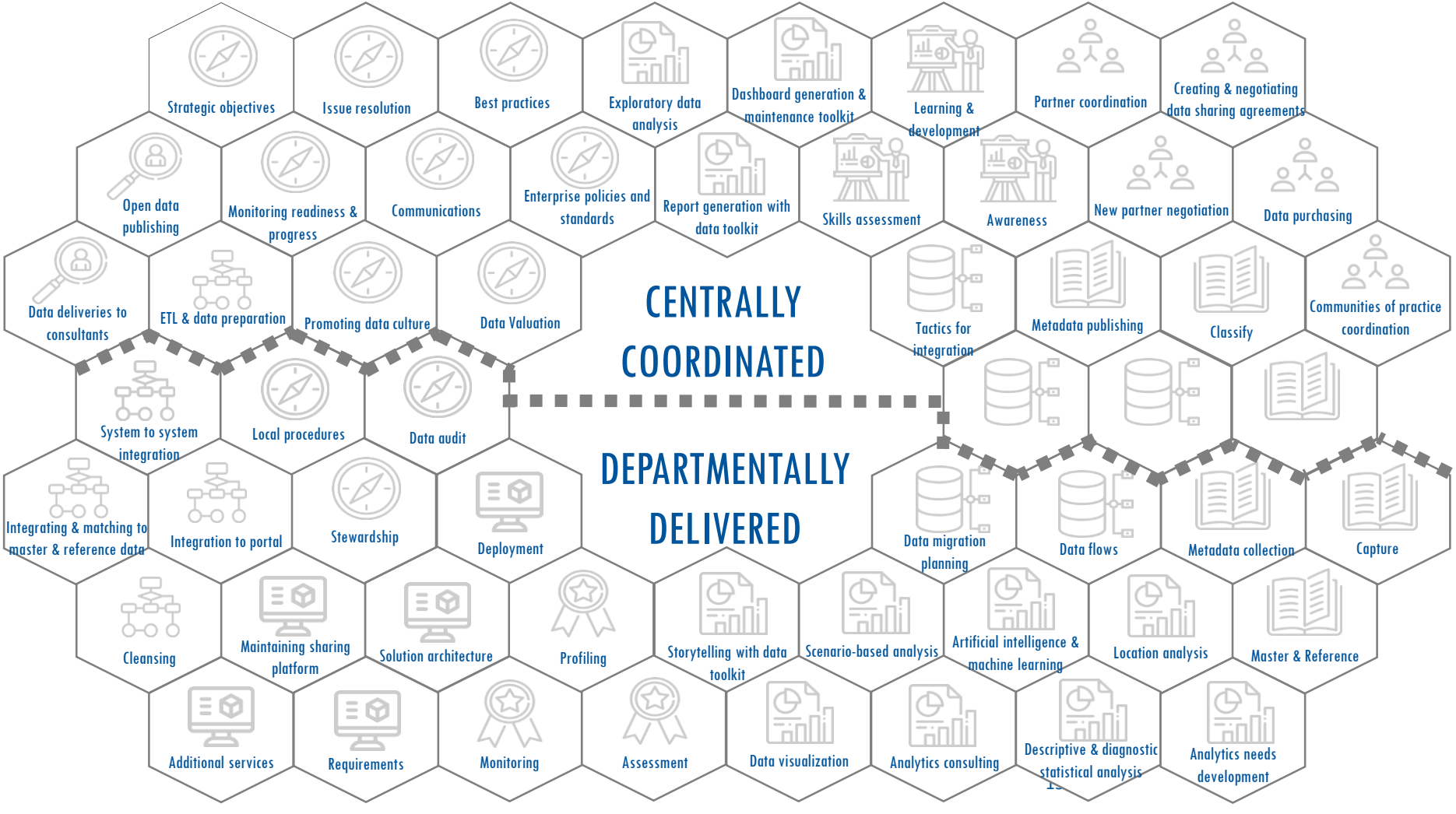
2 - Reactive: Basic functionality does exist within isolated pockets of the organization

3 - Proactive: Most of the functionalities exist with consistency

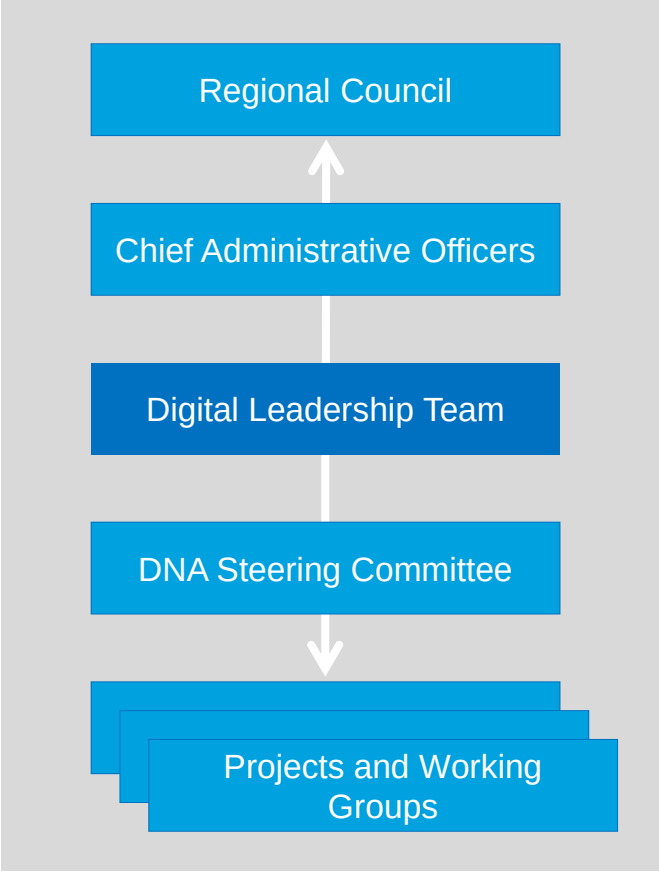
4 - Committed: exist within the organization and are well connected, accepted and adopted

5 - Leader: All exist and have been adopted and scaled across.

PARTNERED THROUGH SERVICE DELIVERY



HOW WE ARE ORGANIZED

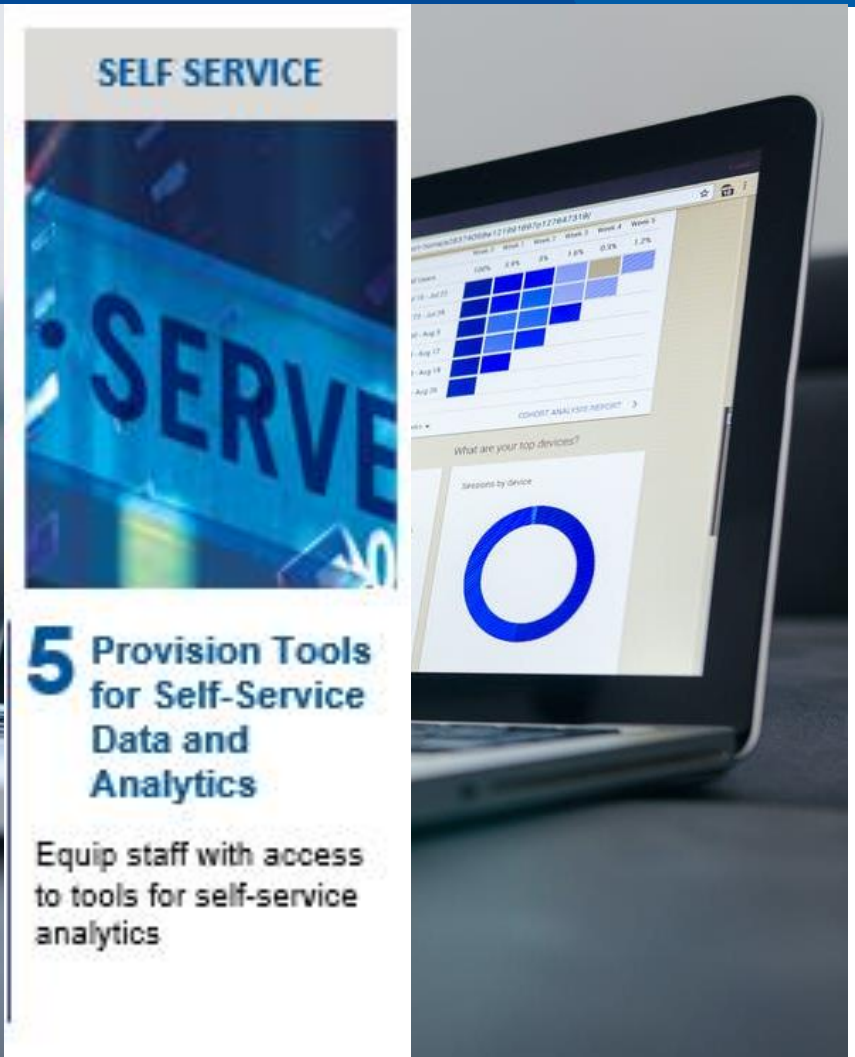


- Distributed Governance
- Digital leaders across the organization
- Figure out the federated model
- Central coordination and departmental delivery
- Steering Committee guides the work

STEERING COMMITTEE: HOW WE DRIVE CHANGE

TOP 5 ACHIEVEMENTS TO DATE

DASHBOARD GALLERY: SELF-SERVE ANALYTICS



- COVID ignited demand
- Managers need insight into business
- Inventoried all dashboards
- Duplication across business units
- Applying brand standards and standardizing technology
- One window providing access to all internal dashboards

360 VIEW: PROVIDING TOOLS AND ACCESS TO DATA

ACCESS

4 Provide Access to Trusted and Timely Data

Provide appropriate access to the right data at the right time to support decision-making.

uilding strong, caring and safe
ommunities. Increasing quality
life

/ater, Wastewater; Fire, Police,
arks and Recreation, Courts,
ibraries, Roads, Solid Waste,
MS, Family and Children
ervices…

overnance: policies, standards,
uidelines, best practices. **Management**:
ata and information architecture, access /
ermission, data design, data quality,
earch, information and metadata
epositories, information lifecycle
anagement …

overnance: policies, standards,
uidelines, best practices. **:**
rchitecture, hardware, enterprise
oftware, communications, networks,
perating systems, databases,
ecurity, mobile devices…

uman Resources: Staff,
ontractors,
hysical Infrastructure: Pipes,
oads, buildings, property,

Data Catalogue

Analytics & Dashboards Catalogue

esri ArcGIS Online Geocortex Analytics & Visualization Power BI tableau

Data Publishing

Business Data Preparation and Transformation

Microsoft esri

Platform Governance

Source Business Systems
(e.g. SCADA, Maximo, PeopleSoft, Spatial editing, External hosted data)

DIGITAL ACADEMY: Building data and analytics muscle

3 Enhance Capabilities and Literacy

Provision access to training and adoption tactics to promote and enhance data literacy.

STREAMS: **Information – Technology – Data**

LEARNING PATHWAYS:
- **All Staff Discover Series**
- **Professionals – Digital Lounge**
- **External Partner Staff**

BUILD APPROPRIATE SKILLS:
- **Foundational Skills**
- **Applied Skills**
- **Foundational and Applied Skills**

COMPETENCIES: **Data Management – Metadata Management - Stewardship**

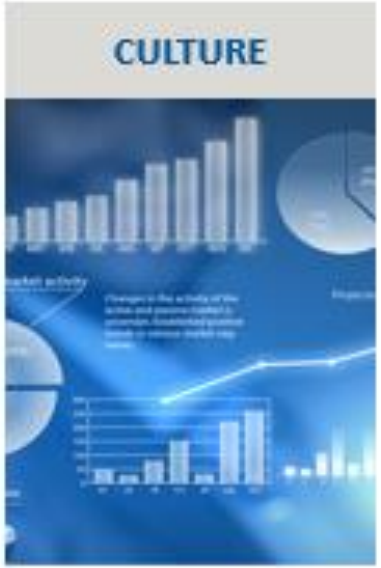
CONTENT:
- **SOURCED** - Statistics Canada – LinkedIn Learning – Geospatial Training
- **DEVELOPED** - In class – virtual - peer to peer learning

INFORMATION GOVERNANCE FRAMEWORK: Putting governance in place

2 Establish Governance

Establish and adopt horizontal and vertical governance, with clear accountability.

DATA HEROES: EVOLVING THE CULTURE



1 Build a Data Informed Culture

Foster an organizational culture that supports data informed activities and outcomes.

Data Hero: Collaboration

CAROLYNNE & TEEMA: DATA HEROES

YORKINFO PARTNERSHIP

yorkinfo PARTNERSHIP

Learning, Building and Sharing

SINGLE TAXPAYER

Local

- Culture
- Fire
- Heritage
- Library Services
- Parking
- Parks & Recreation
- Permits and Licensing
- Tax Collection

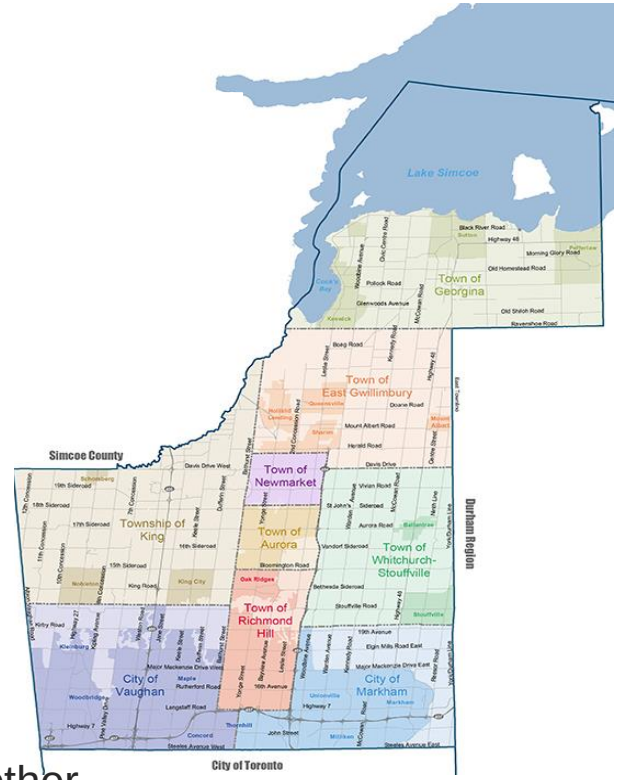
Shared

- Bylaw Enforcement
- Planning & Development
- Roads & Street trees
- Solid Waste
- Water/Wastewater

Regional

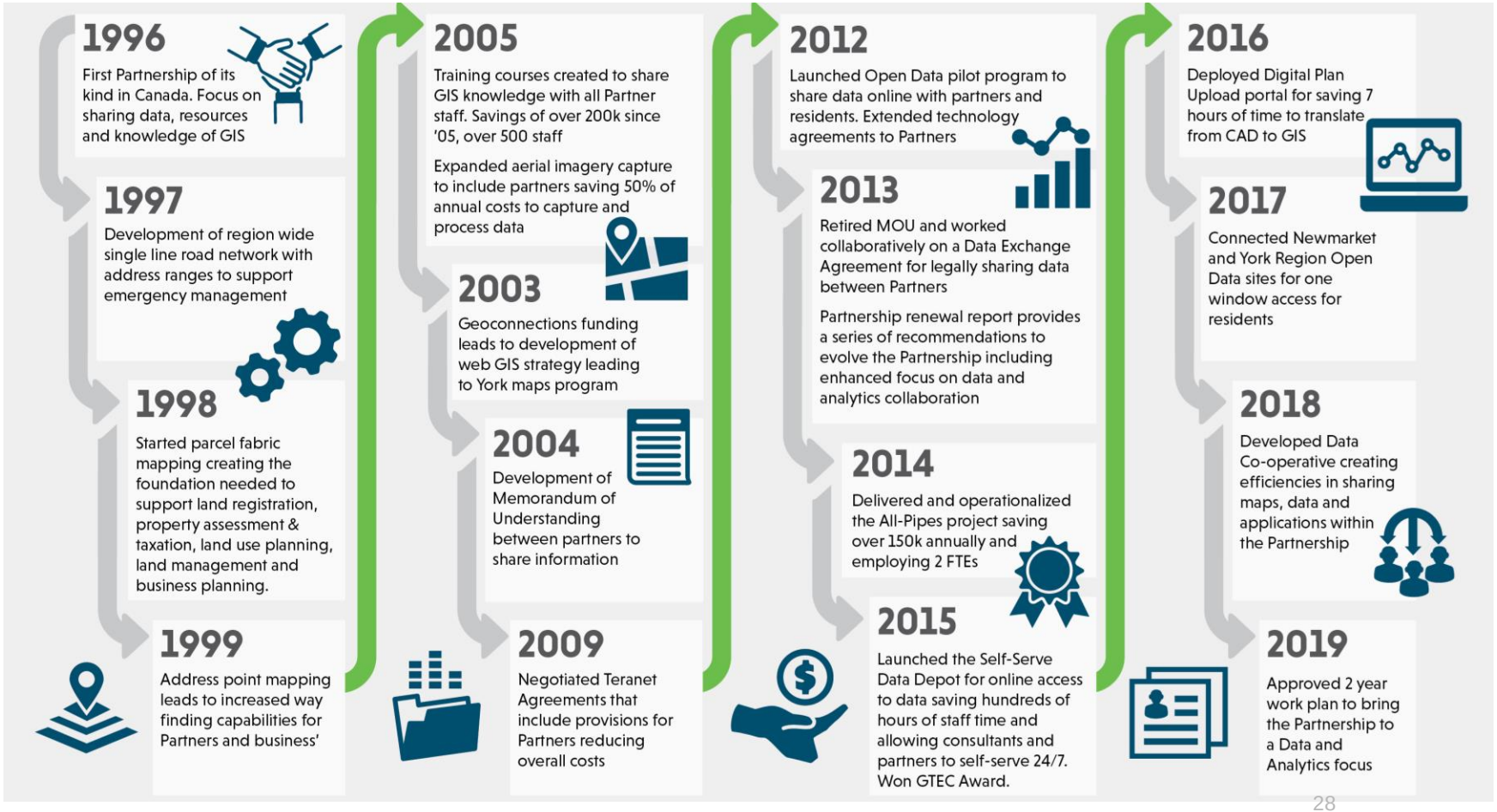
- Public Health
- Housing
- Police Services
- Transit/Rapid Transit
- Court Services
- Paramedic Services
- Regional Forests
- Long-Term Care
- Social Assistance
- Family & Children's Services

STRONG PARTNERSHIPS MATTER



- Over 100 data and analytics staff supporting one another
- Rapid deployment of business solutions East Gwillimbury

ACCOMPLISHMENTS



MATURITY SCALE

Investing in data and analytics **technology**	✓	✓	✓	✓	✓	✓	✓	✓	!	✓	✓	✗
Data is recognized as a **corporate asset**	✓	✓	✓	✓	✓	✓	!	✓	✓	✓	✗	✗
Standardized methods of data management	!	✓	!	!	✓	✓	✓	!	!	!	!	!
Defined **organizational structure**	✓	!	!	✓	✓	✗	!	!	✗	!	!	✗
Data is **shared freely**	!	✓	!	✓	✓	✓	✗	✗	✗	!	✗	!
Developing data and/or analytics **strategies**	!	!	✓	!	✓	!	!	✗	✗	✗	✓	✗
Value understood and accepted	✓	!	!	!	✗	!	!	!	✓	!	✗	✗
Collaboration occuring between departments	!	!	!	!	✗	✗	✓	✓	✗	✗	!	!
Deployed a **data catalogue**	✓	✓	!	!	✗	!	!	✗	!	✗	✗	✗
Adopted **governance** structures	!	!	!	✓	!	✗	✗	✗	✗	✗	!	✗
Providing data and analytics **training**	✓	!	!	✗	✓	✗	✗	✗	✗	✗	✗	✗
An **executive** responsible for data & analytics	✓	!	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
Example of **proven value** of data and analytics	!	✓	✗	✗	✗	✗	✗	✗	!	✗	✗	✗
Data and analytics **recruitment** strategy	✗	✓	✗	✗	✗	✗	✗	✗	!	✗	✗	✗
Increasing **data literacy** in organization	✓	✗	!	✗	✗	✗	✗	✗	✗	✗	✗	✗

MOVING FROM TRADITIONAL GIS

Producers

- Regional Staff
- Partners
- Purchased Data
- External Sources

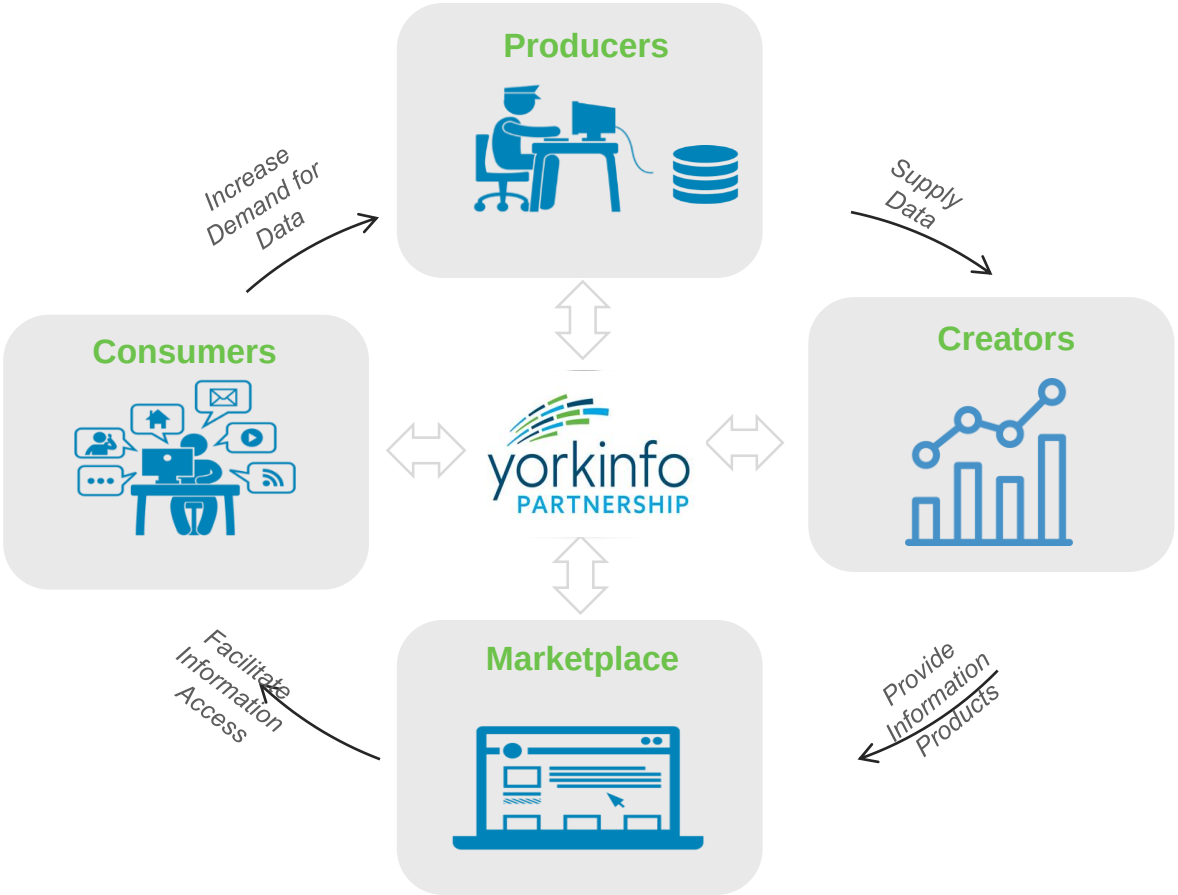
Spatial Data Warehouse
(800+)

- Parcel
  Address
  Roads
- MPAC
  LIO
  MOE
  Boundaries
- Teranet
  Environics
  Orthophotography
  Walkscore
- Transportation
  Transit
  Environment
  Society
  Planning
- Health
  EMS
  Economy
  Utilities
  Legal
- All Pipes
  Parks
  Infrastructure
- Recreation
  Conservation
  Police
  Fire

Consumers

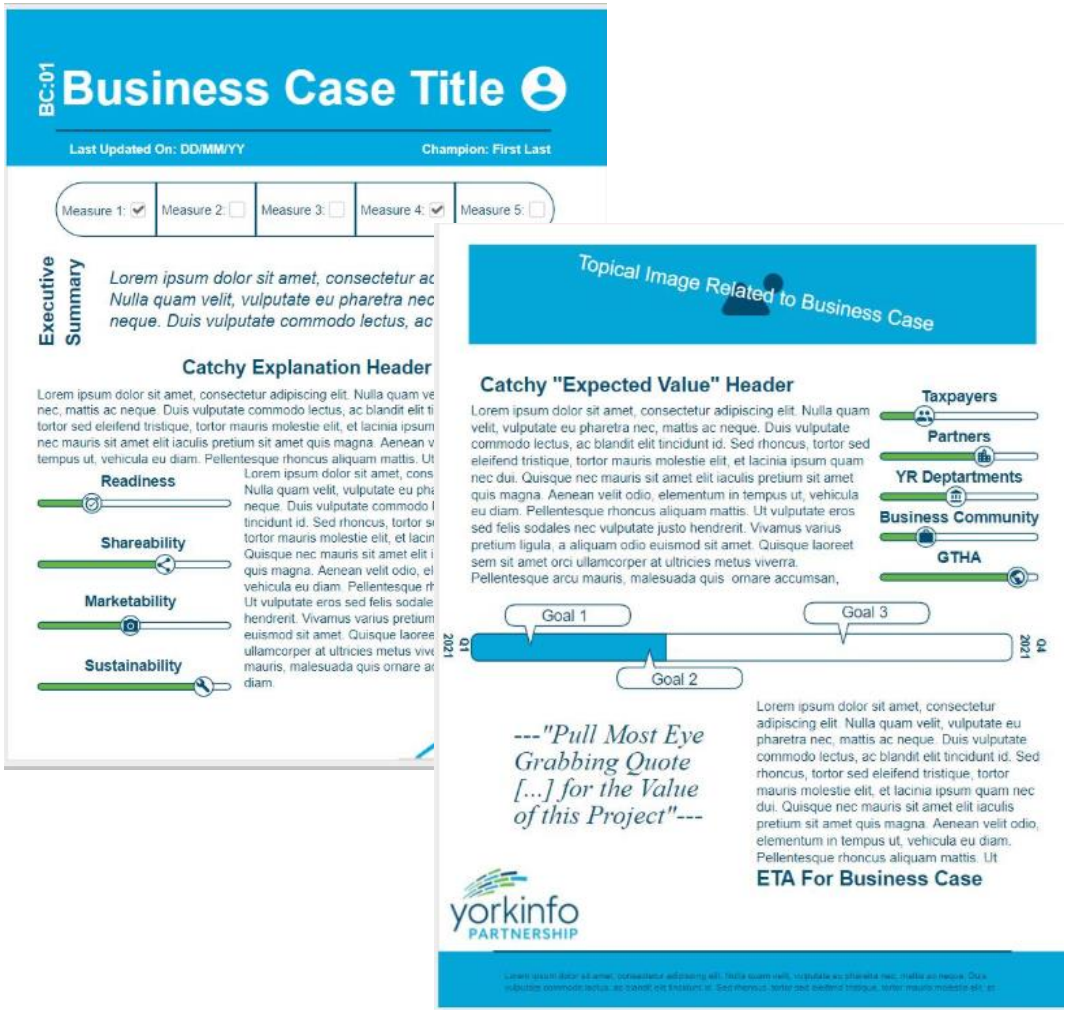
- Desktop GIS
- Web and Mobile GIS
- SSDD
- Open Data

TO COOPERATIVE D.A.T.A



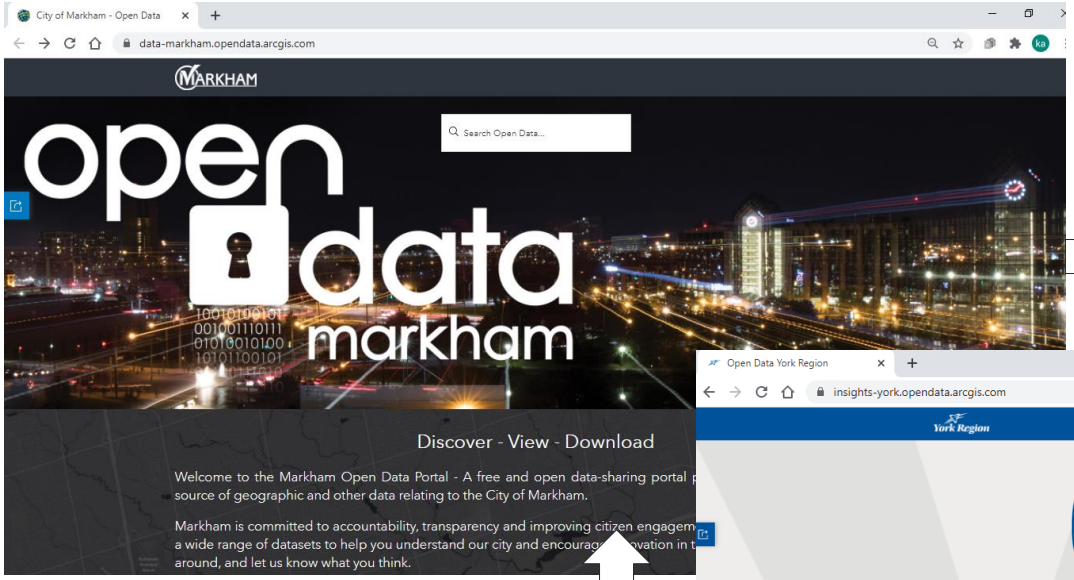
VIDEO AND DEMO

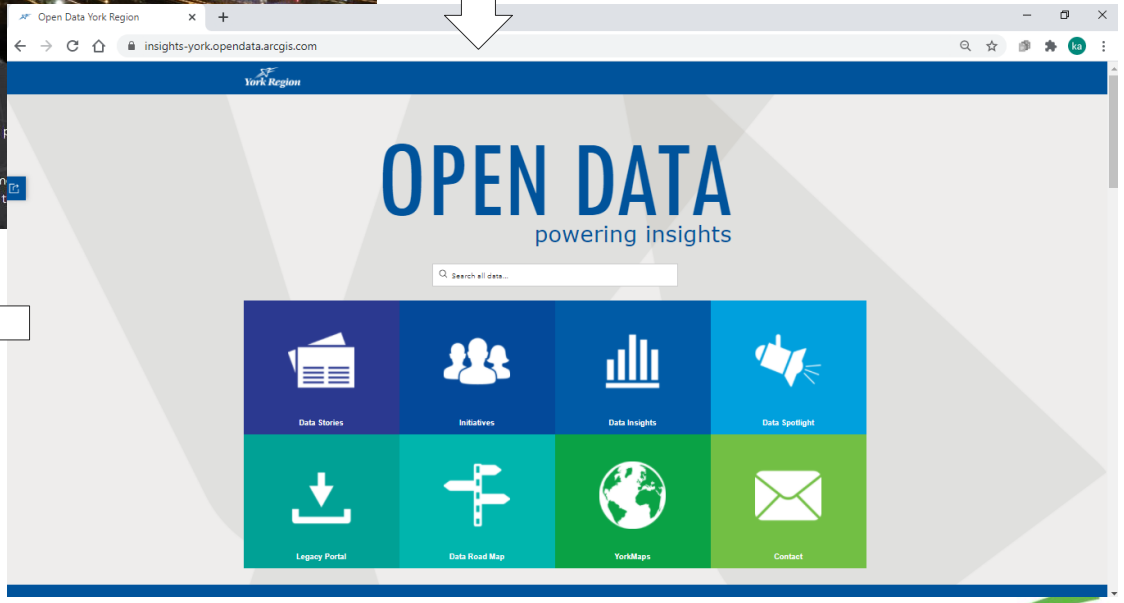
BUSINESS CASES



- Across many levels of govt
- Alignment to business need
- Over 50 use cases identified (pipes, permits, construction, climate change, planning…)
- Create efficiencies, cost sharing, streamline process and increasing communication
- Designed business case template to fully articulate value
- documented by end of year
- Will be made available on yorkinfopartnership.com for everyone

FEDERATED OPEN DATA





- No wrong door
- ArcGIS Online
- Rapid deployment
- Enhance user experience
- APIs

KEYS TO PARTNERSHIP SUCCESS

DATA PARTNERSHIPS 2.4

Learning, building and sharing together.

5. COMMON TECHNOLOGY

- Standardized on Esri platform
- Partners at various levels of maturity
- Maturity not a barrier for participation
- Share data, applications and tools easily
- Training
- Simple to integrate with other platforms
- All speaking the same language

4. PLATFORM GOVERNANCE

- Established rules, roles and responsibilities
- Gives partners control over what is shared and to whom they share
- Work group administrators to reduce risk
- Scalable sharing from one-time project to recurring program
- Integrated business processes of governance with the technical platform allowing it to evolve

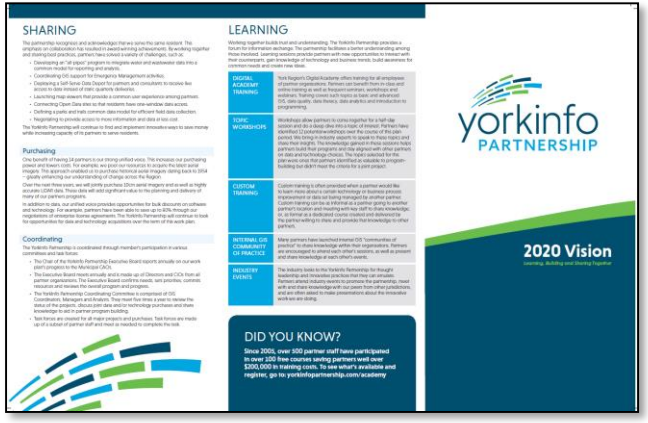
3. LEGAL AGREEMENT

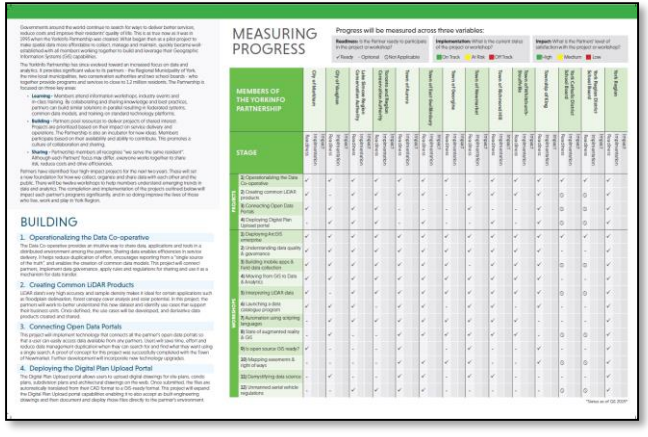
YorkInfo Membership Agreement - allows for full fledged members and data sharing members

YorkInfo Commons Data Sharing Agreement is aligned to the D.A.T.A Co-operative technology

V1	V2
Data only	Data, tools, apps and training
Exchange	Exchange and collaboration
Use of local data copies	Integration of ‘live’ data
One-to-one exchange	Partnership open by default

2. JOINT WORK PLAN

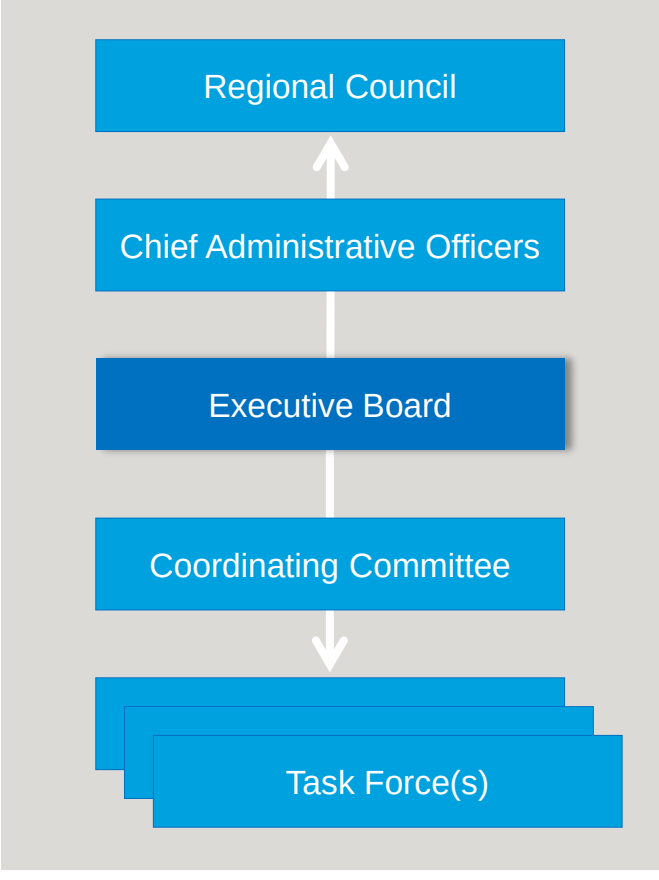




- **Learn** – Training provided through a Digital Academy, online training and workshops
- **Build** - Find areas of common interest and create a joint work plan around 4-6 key projects
- **Share** - Find cost savings through joint data and technology purchases

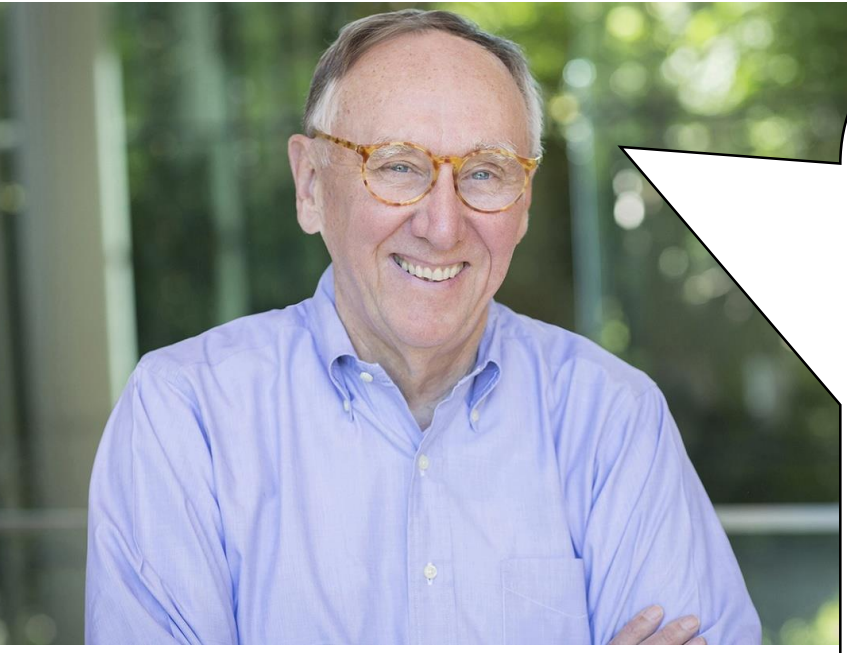
Track progress through a multi-year work plan with scorecard

1. PROGRAM GOVERNANCE



- Aligned to Corporate Strategic Plan
- Report annually to Regional Council
- Oversight from Chief Administrative Officer’s
- Direction from Executive Board
- Coordinated by a Manager
- Aligned technical staff
- Work completed through task forces
- Lots of "Social Grease"

BONUS: SOCIAL GREASE



A snippet from Jack Dangermond's reason he selected York Region for the Esri Presidents award

"…yours represents a pattern that is worth repeating across Canada and across the world… only your peers really know what it took to be able to pull off what you have done. They know how difficult it is to get the money to do it, getting management support, getting consensus amongst these other agencies, ***doing all the social grease part of it****, building and maintaining the architecture and having the vision. Only your peers know"*

WHAT'S NEXT?

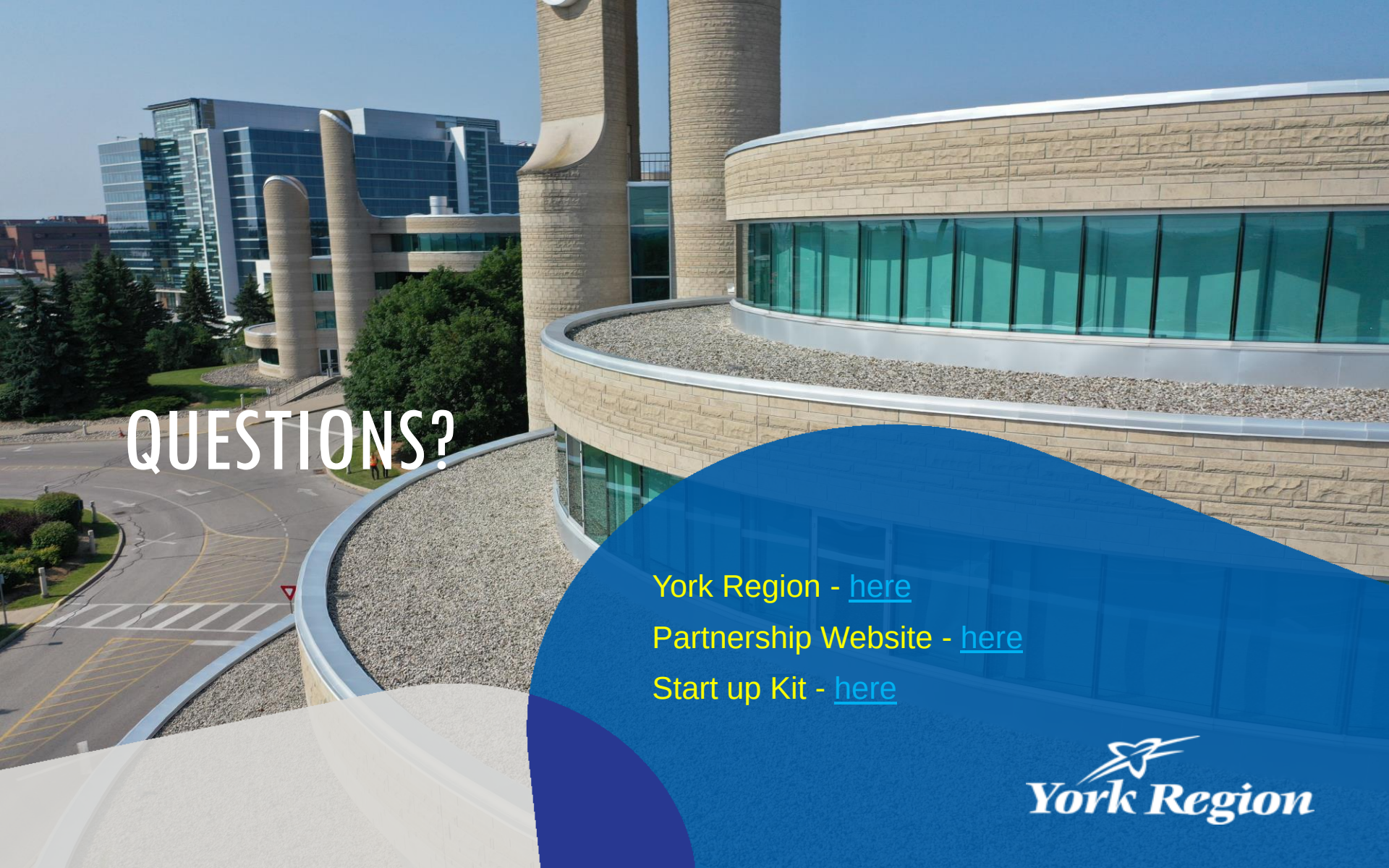
WHERE ARE WE GOING NEXT?

YorkInfo Partnership

- Create and implement a new two-year work-plan
- Add content and users to the D.A.T.A Coop
- Implement V2 of the Data Sharing Agreement

DnA Master Plan

- Develop 2021 workplan ~10 projects
- Complete work on "Federated Model"
- Implement the DnA Services Catalogue
- Add Discover Data courses to the Digital Academy



QUESTIONS?

York Region - here

Partnership Website - here

Start up Kit - here

York Region