



***How GIS  
Connects  
Communities***

# YOU

PART OF A GLOBAL COMMUNITY  
OF GIS PROFESSIONALS

INTERESTS

NATIONALITIES

ORGANIZATIONS

BACKGROUNDS

DISCIPLINES

CULTURES



# The Global GIS User Communities

Across All  
Industries:

- Public
- Private
- Non-Profit



Geography,  
Maps, & GIS are  
the Language

# Esri by the Numbers



esri

Pioneering Corporate  
Citizenship since 1969...



*Using technology, science, and a  
geographic approach to make  
better decisions and build  
sustainable prosperity while  
safeguarding the planet.*

# The GIS User Communities are critically important

- We serve our users
- We help grow the communities
- We promote GIS as a Profession
- We reinvest 30% of revenue into R&D



The GIS User Communities are critically important

# YOUR WORK

*Addressing Our Challenges*

Infrastructure  
Economic Development  
Pollution  
Nature Conservation  
Health  
Energy  
Transparent Government  
Natural Resources  
Climate Change  
National Security  
Science & Technology  
Environment  
Water Resources  
Agriculture  
Social Conflicts  
Business  
Urbanization & Development  
Equity  
Natural Disasters  
International Relationships

*... Working Together to  
Make the World a Better Place*

# The Building Blocks from Across Esri





# Products

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## ArcGIS Enterprise

The foundational software system for GIS, powering mapping and visualization, analytics, and data management across your organization



## ArcGIS Pro

The world's leading GIS software, ArcGIS Pro provides data visualization, advanced analysis, and authoritative data maintenance in 2D, 3D, and 4D.



## ArcGIS Platform

A platform-as-a-service for developers to integrate market-leading, high-quality location services, data, and mapping tools into apps and business systems.



## ArcGIS Online

A cloud-based software-as-a-service solution designed for creating and sharing interactive web maps and performing geospatial analysis.



# Capabilities



Mapping



Field Operations



Spatial Analysis  
& Data Science



Imagery & Remote  
Sensing



Real-Time  
Visualization &  
Analytics



3D Visualization  
& Analytics



Data  
Management



Developer  
APIs



# GIS

Enables The Geographic Approach

A Powerful Platform for . . .

Creating Understanding . . .

Exploring Alternatives . . .

Finding Solutions . . .

Explaining . . .

. . . and Taking Action



Data  
Collection

Visualization &  
Mapping

Analysis &  
Modeling

Planning &  
Geodesign

Decision-  
Making



Improving How We  
Create the Future

# SUPPORTING USERS

Esri Press

User Groups

Esri Community

Blogs

*ArcNews*

User Conference

Personal Use License

Webinars

**Technical Support**

Documentation &  
Web Resources

NGO / NPO Program

*ArcUser*

Young Professionals Network

Podcasts

**Professional Services**

**GIS Day**

November 15, 2023



*Sharing Best Practices  
and Supporting the GIS Community*



# PROFESSIONAL DEVELOPMENT

COMPREHENSIVE SKILLS TRAINING



Progressive Learning Programs

MOOCs

100s of Free Courses

Learning Plans

Tutorials

650K+ User Trainings

Web Courses

Instructor-Led Courses

Technical Certification

Workforce Development



New MOOCs

Helping Users Stay Current and Grow Their Careers

# GIS

Applied in Many Fields

Economic Development

**Pollution** Nature Conservation **Health**

Energy Transparent Government

**Natural Resources** Climate Change

National Security Science & Technology

**Business** **Environment** Water Resources

Agriculture Social Conflicts

**Urbanization & Development**







Natural Disasters

Infrastructure

*Helping Organizations Do Their Work Better  
Delivering Business Value Everywhere*

schools

### EXPLORE DATA BY THEME

-  administrative boundaries
-  agriculture
-  environment
-  hydrology
-  infrastructure
-  properties

schools

### REFINE YOUR SEARCH

- Select a data type...
  - Select a category...
  - Select a theme...
  - Select a source...
  - Select a region...
- reset filter      apply filter

### RESULTS

Viewing 1-20 of 48 records    Pages 1 2 3

Relevance    Title    Date

#### Senior Primary Schools

Harry Gwala District Municipality



Senior Primary Schools for Harry Gwala District Municipality  
Spatial Reference = GCS\_Hardheadbook\_1984\_Spatial Type = Point\_Feature Count = 1\_File Size = 7.4 KB  
Socio-Economic Conditions

spatial layer

2 Sep 20

#### Schools

Ingquza Hill Local Municipality



Schools for Ingquza Hill Local Municipality  
Spatial Reference = WGS84

- details
- view on map
- download

### Environmental Disasters Questionnaire

#### Location

Set Location

#### Name and Surname

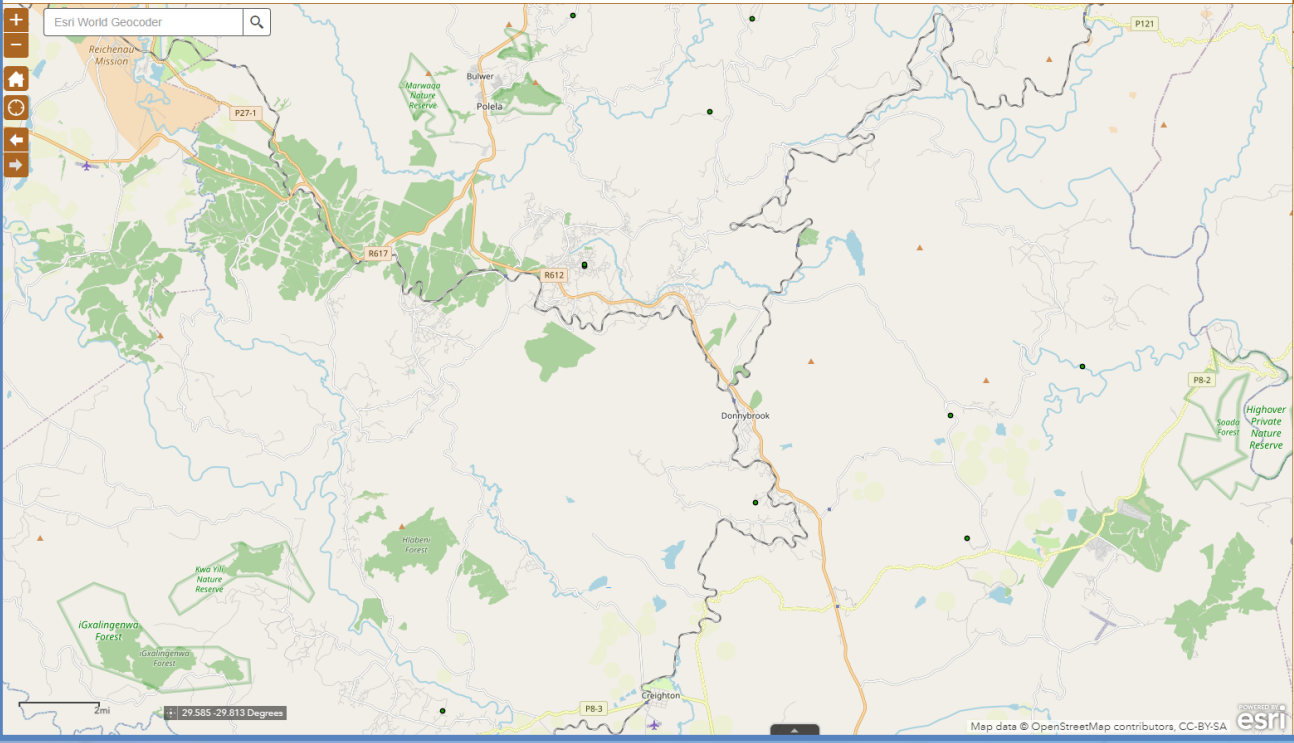
#### Local municipality

#### Town

#### Disaster Type

- Fire
- Water
- Air

### Data Viewer



### Add Data

- | Search                                 | URL                           | File        |
|--|-------------------------------|-------------|
| NSPDR Layers                           |                               |             |
| <input type="checkbox"/> Within map... | Type                          | Relevance   |
| MunicipalDemarcationBoard              | Map Service by portaladmin    | ADD DETAILS |
| Infrastructure                         | Map Service by portaladmin    | ADD DETAILS |
| Heritage                               | Feature Service by nspdr_data | ADD DETAILS |
| Hydrology                              | Map Service by portaladmin    | ADD DETAILS |
| Main Roads                             | Feature Service by nspdr_data | ADD DETAILS |
| Property                               | Map Service by portaladmin    | ADD DETAILS |
| Secondary Roads                        | Feature Service by nspdr_data | ADD DETAILS |
| Farms                                  | Feature Service by nspdr_data | ADD DETAILS |
| Senior Primary Schools                 | Feature Service by nspdr_data | ADD DETAILS |
| Railway Line                           | Feature Service by nspdr_data | ADD DETAILS |
- 1,358 Items    LAYERS

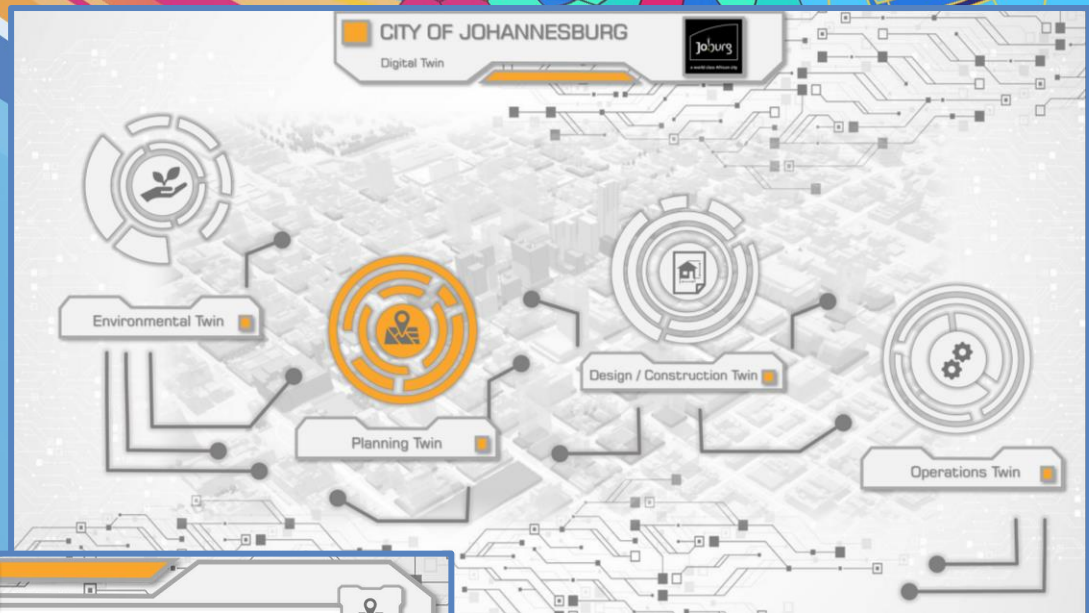
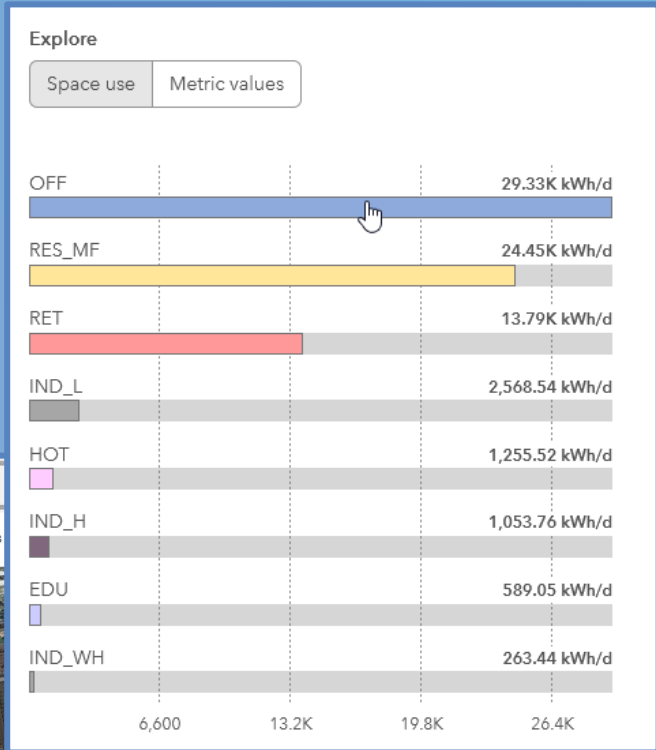
# City of Johannesburg

## ArcGIS Urban Digital Twin

Type

Building Dwelling units

Building parts configuration



Planning: Development Application Status

ICSM Development Application Dashboard

SELECT FINANCIAL YEAR

None	2008	2009	2010
2011	2012	2013	2014
2015	2016	2017	2018
2019	2020	2021	2022
2023			

SELECT APPLICATION TYPE

None

SELECT APPLICATION STATUS

No category selected

DEVELOPMENT APPLICATIONS PER YEAR

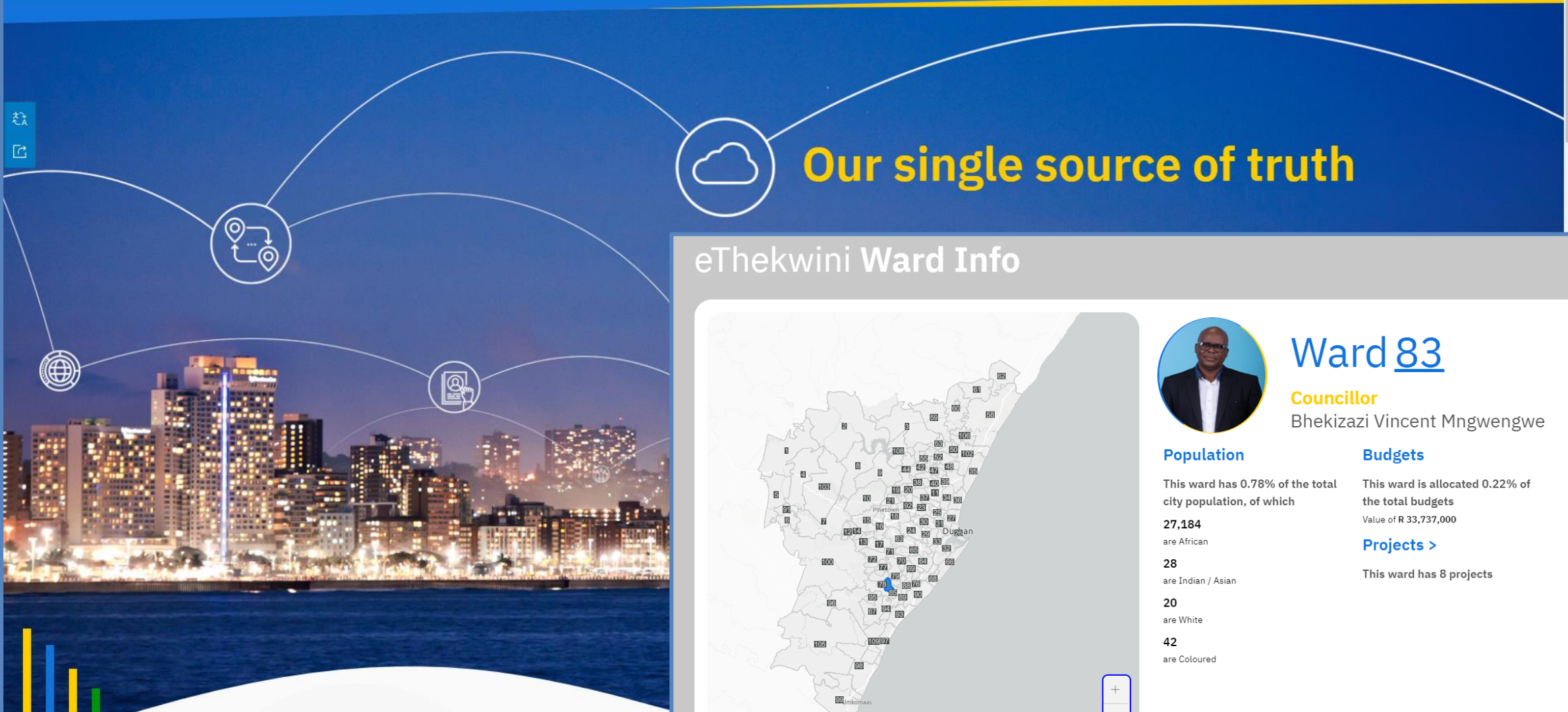
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Count	150	450	350	320	420	280	400	350	250	250	300	280	280	200	180	50

DEVELOPMENT APPLICATIONS

- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Ordinary-Rezoning (01-15959), 16 October 2015, Appeal Against Decision Withdrawn
- Building Application (2021/12/0406), 9 December 2021, Approved (Building plans are approved)
- Building Application (2016/05/0827), 17 May 2016, Approved (Building plans are approved)
- Building Application (2013/11/1312), 26 November 2013, Approved (Building plans are approved)
- Building Application (2010/03/03391), 8 March 2010, Approved (Building plans are approved)
- Building Application (2011/1/0855), 15 November 2011, Approved (Building plans are approved)

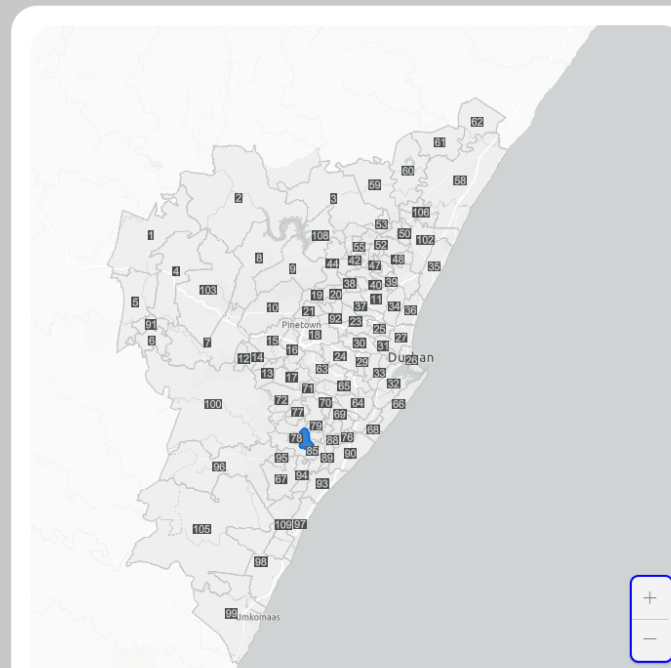


# eThekwini Strategic Hub



 **Our single source of truth**

## eThekwini Ward Info



### Ward 83

**Councillor**  
Bhekizazi Vincent Mngwengwe

#### Population

This ward has 0.78% of the total city population, of which  
**27,184**  
are African  
**28**  
are Indian / Asian  
**20**  
are White  
**42**  
are Coloured


#### Budgets

This ward is allocated 0.22% of the total budgets  
Value of R 33,737,000

#### Projects >


This ward has 8 projects

# eThekwini Strategic Hub



eThekwini Road Crashes Dashboard

Filter by Year  
2023
Filter by Month  
All Months
Filter by Day  
All Days


Total Road Crashes

 **14,882**


Fatalities

 **107**


Serious Injuries

 **749**


Slight Injuries

 **2,745**

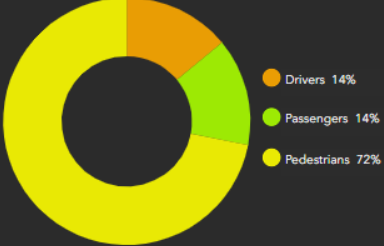
No. of Pedestrians Involved

 **1,195**

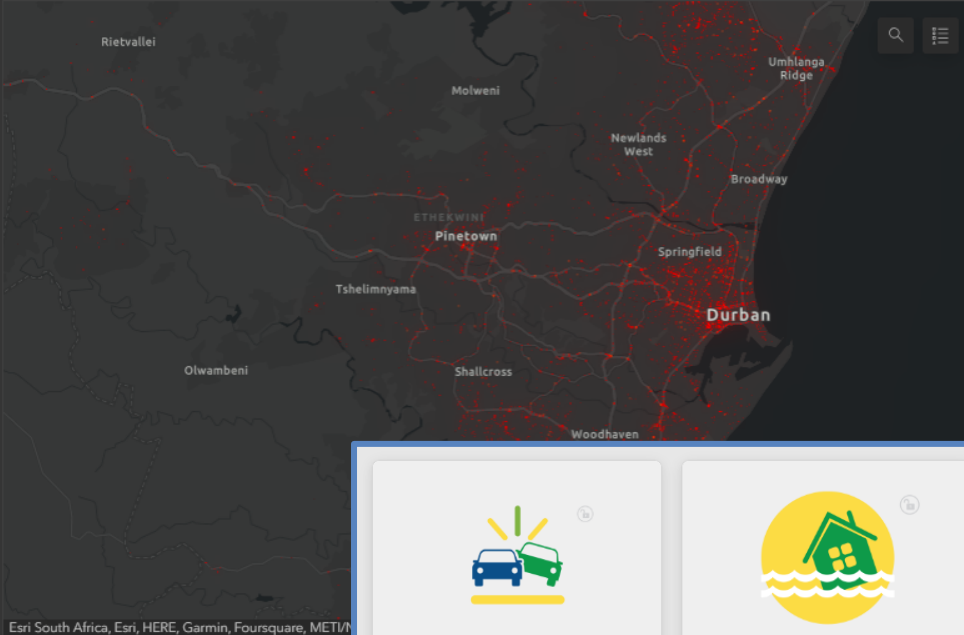
No. of Vehicles Involved

 **27,646**

**Fatalities by Road User Type**

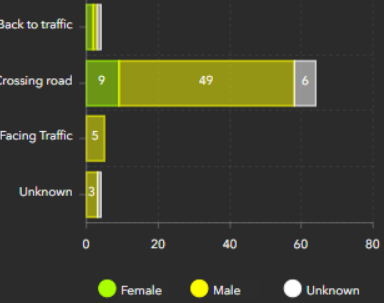


- Drivers 14%
- Passengers 14%
- Pedestrians 72%



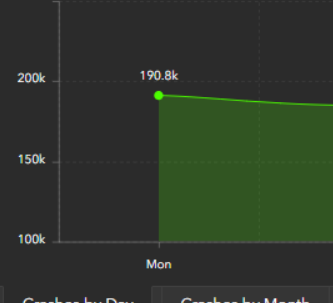
Crash Type	Total	Fatalities
Sideswipe: Opp direction	489	4
Head on	72	2
Rear end	4,128	2
Sideswipe: Same direction	2,639	2
Right angle-turn	1,082	1
Turn right opposing	546	1
Alighting/Boarding	4	0
Left turn (same)	275	0
Multi-vehicle Rear end	49	0
Parked sideswipe	385	0
Parked/Parking	431	0
Projecting load	4	0
Reversing	758	0
Right Angle stationary	56	0

**Fatalities by Pedestrian Maneuver**



Maneuver	Female	Male	Unknown
Back to traffic	0	0	0
Crossing road	9	49	6
Facing Traffic	5	0	0
Unknown	3	0	0

**Fatalities by Day**





**eThekwini Road Crashes Dashboard**

eThekwini Road Crashes dashboard provides a statistical and spatialized context of road crashes in eThekwini.

[Explore](#)



**eThekwini Municipality Flood Impact Dashboard**

This dashboard provided real-time reporting during the April and May 2022 flooding disaster.

[Explore](#)



**eThekwini State of Safety**

One of eThekwini's key strategic imperatives is to become a safer city. The availability of high quality and integrated data gives the city the...

[Explore](#)



**eThekwini Human Capital Dashboard**

The human capital dashboard provides insights on critical trends such as staff retention, staff experience, staff turnover, progress towards...

[Explore](#)



**eThekwini Social Sentiments Dashboard**

The city through this dashboard can acquire, identify, organize, and analyse public sentiments about the City through social med...

[Explore](#)



**eThekwini Ward Profiles Dashboard**

This ward profiles dashboard provides detailed socio-economic information for each ward.

[Explore](#)



**eThekwini Catalytic Projects Dashboard**

This dashboard maps Catalytic projects by region and provides information on the number of jobs created by each. This analysis is...

[Explore](#)



**eThekwini Property Trends Dashboard**

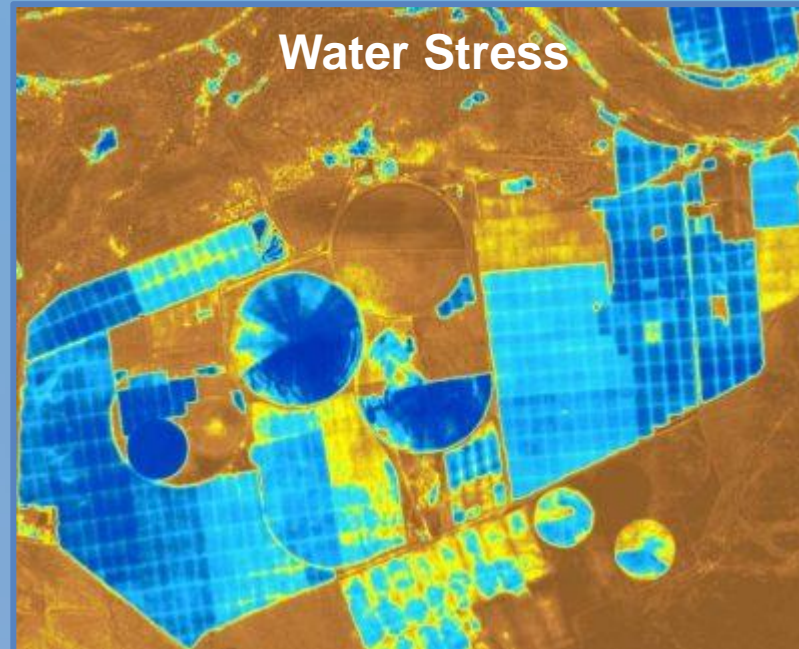
On this dashboard we analyse residential property market trends along the C3 corridor where the GoDurban public transport...

[Explore](#)

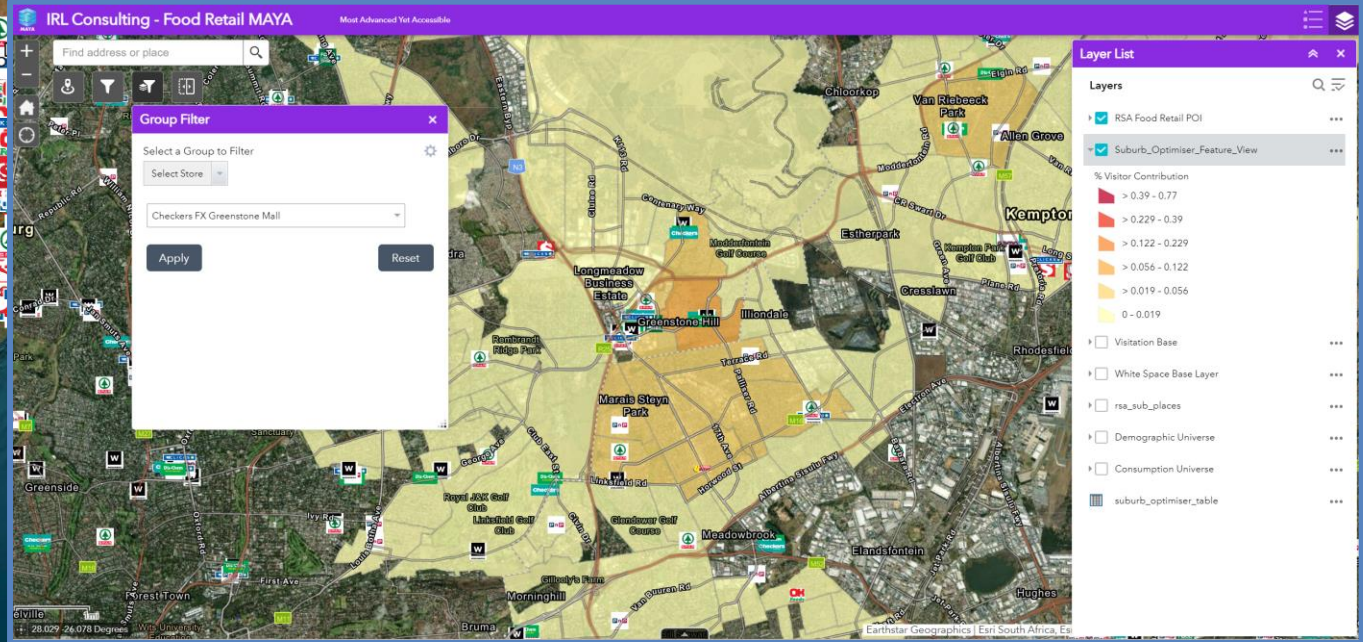
# Swift Geospatial (Esri Partner)

## Precision Agriculture and Farming Monitoring

- Health monitoring
- Yield forecasting
- Pest identification




# IRL Consulting Software as a Service Food Retail – MAYA



# IRL Consulting

## Software as a Service

### Food Retail - MAYA

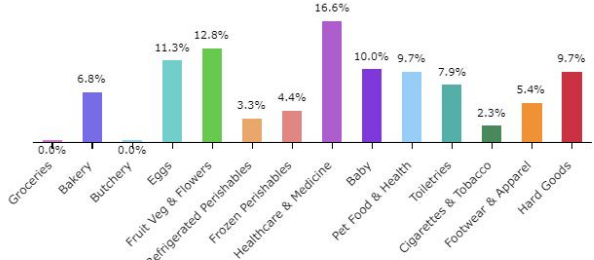


OVERVIEW

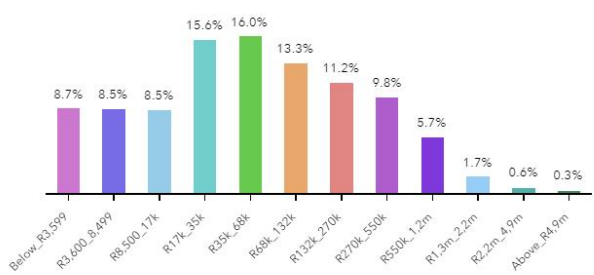
66 Cumberland Ave, Bryanston, Sandton, Johannesburg, Gauteng, 2191, ZAF - 5 km

Nearby Grocery Stores		Direction	Distance (km)
Woolworths	Woolworths Bryan Park	N	1.5
Checkers	Checkers Bryan Park	N	1.5
Spar	Spar Ferndale	S	1.8
PnP	PnP Family Coachmans Crossing	SE	2.3
Checkers	Checkers Nicolway	NE	2.4


#### Consumption Category Distribution




#### Household Income Profile




#### Population & Housing



**107,048**  
Population

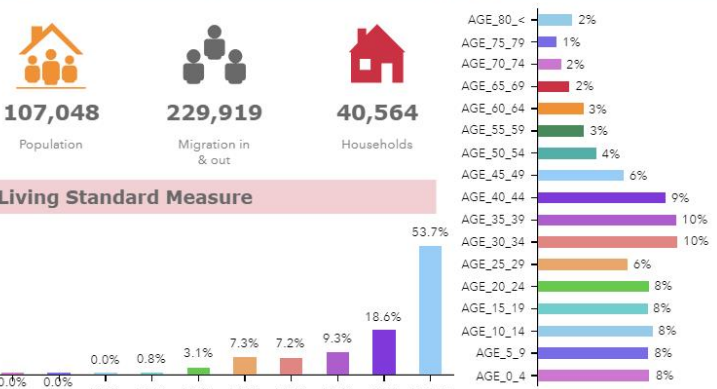


**229,919**  
Migration in & out

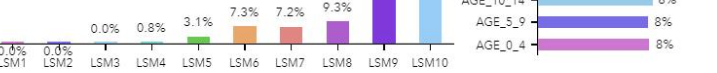


**40,564**  
Households


#### Age Profile



#### Living Standard Measure



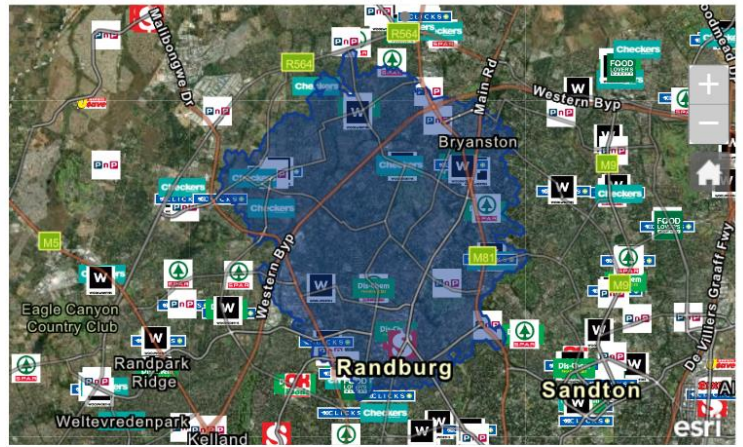
Source: IRL Consulting Proprietary Data



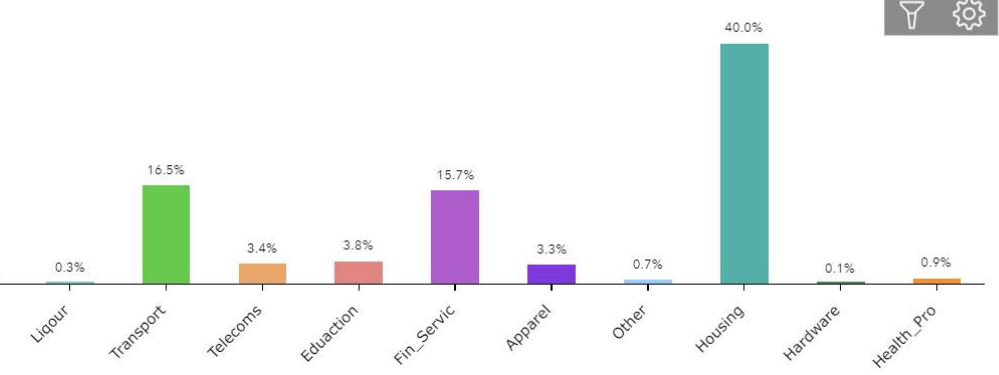
OVERVIEW


66 Cumberland Ave, Bryanston, Sandton, Johannesburg, Gauteng, 2191, ZAF - 5 km

### Consumption Breakdown

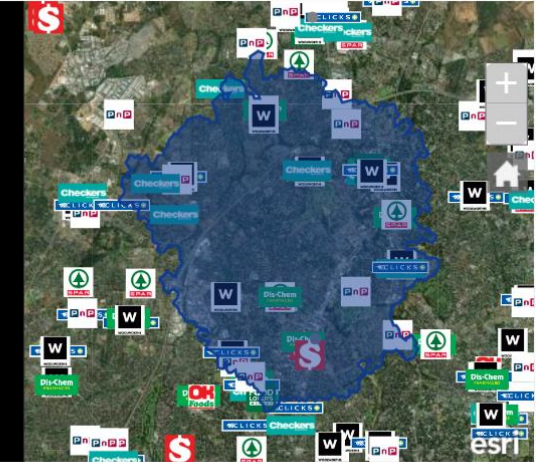



#### Consumption Breakdown



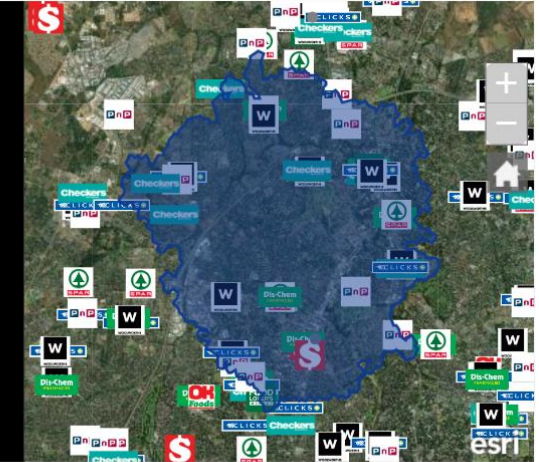


**AR 1,211,345,250**  
Monthly Retail Expenditure





**AR 3,519,843,750**  
Total Monthly Expenditure

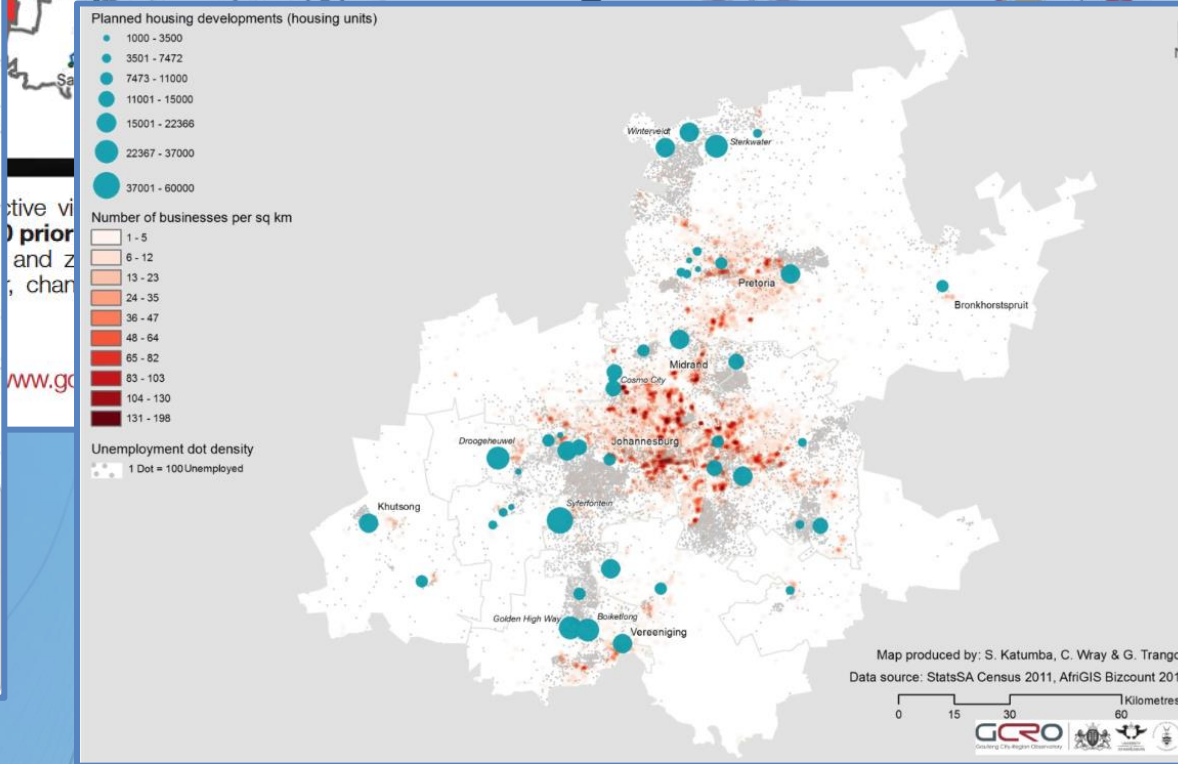
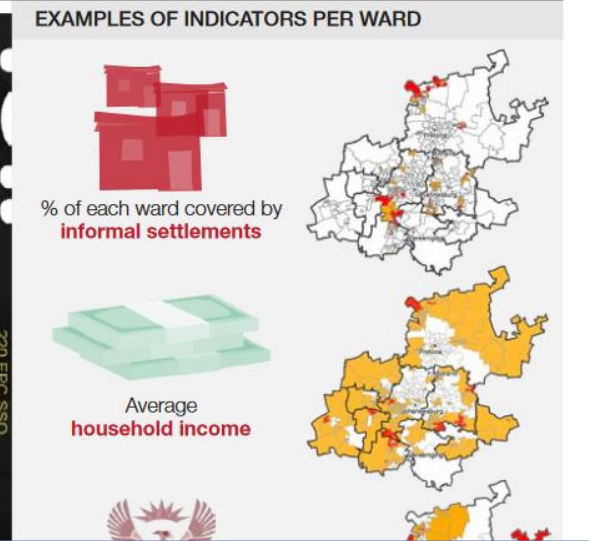
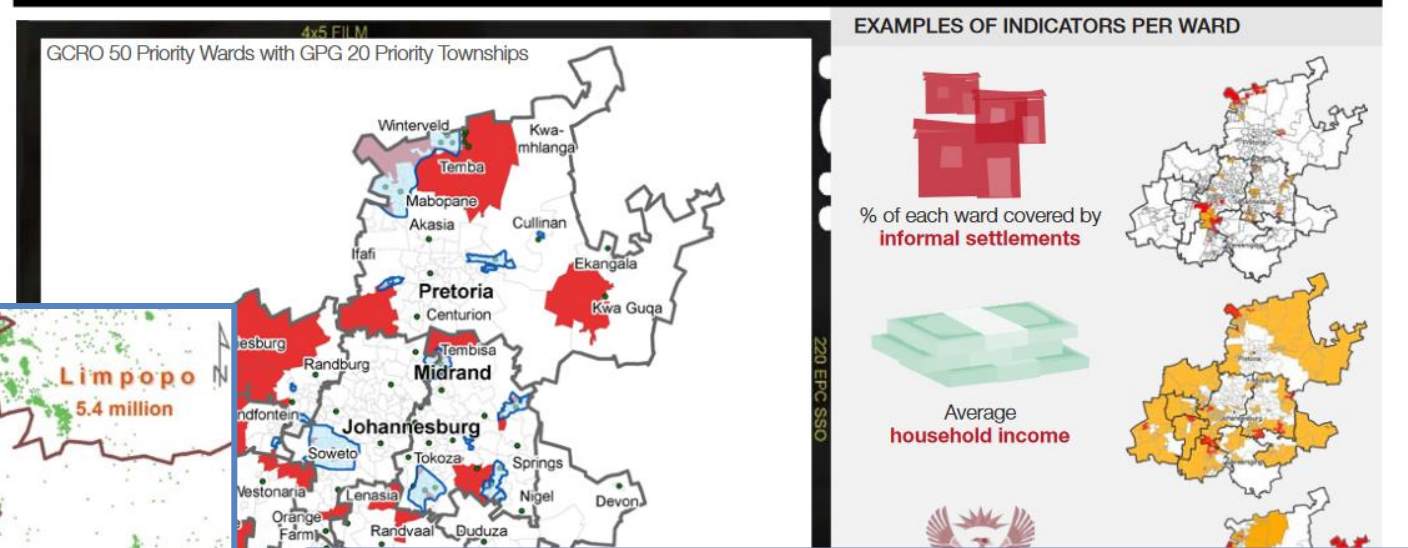
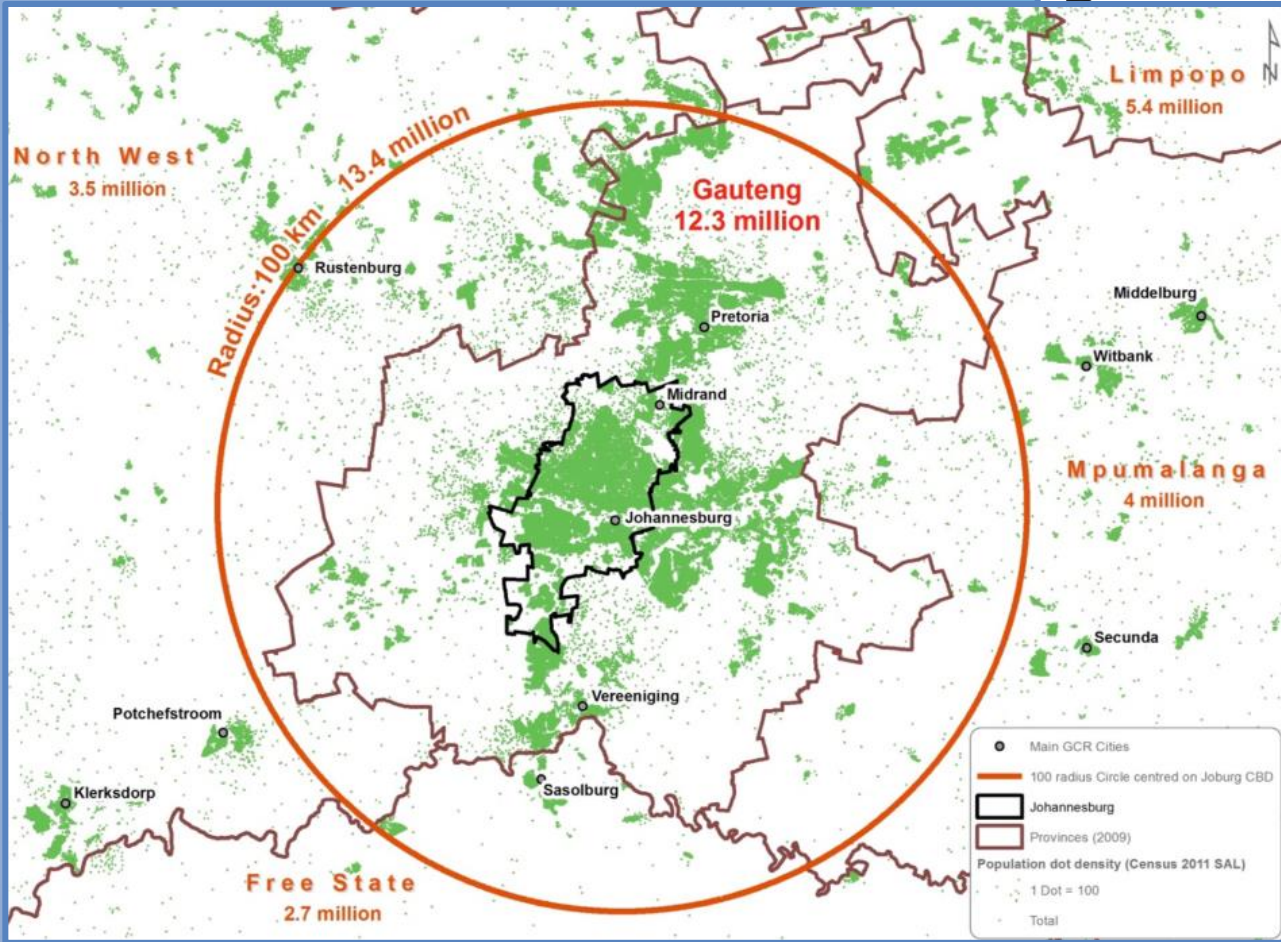


Source: IRL Consulting Proprietary Data

# GCRO

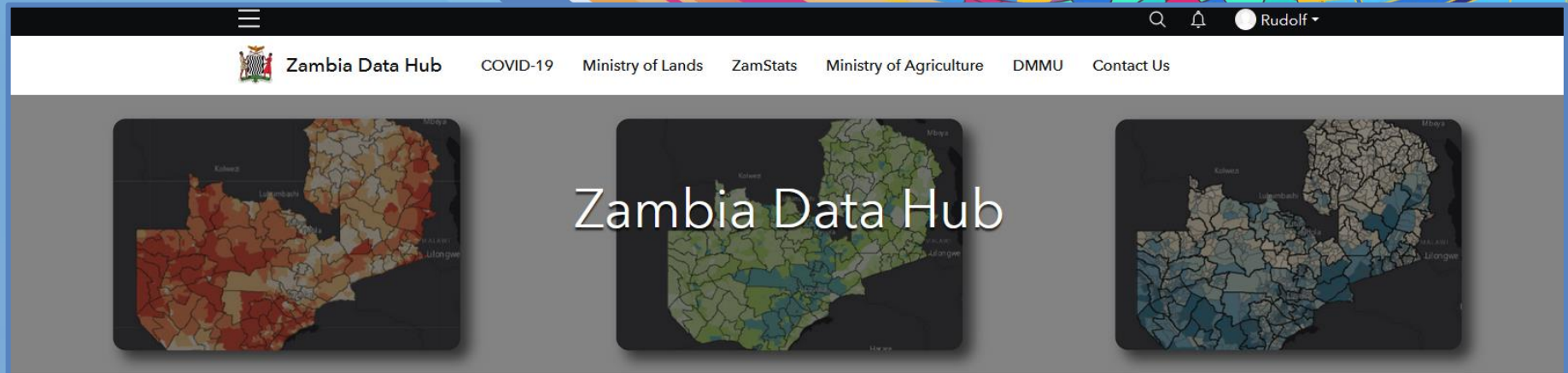
## Gauteng City-Region Observatory (GCRO)

### 06 Gauteng's 50 priority wards



# Zambia

## National Spatial Data Infrastructure (NSDI)



The Government of the Republic of Zambia, through the Ministry of Lands and Natural Resources, Zambia Statistics Agency (ZamStats) and other government stakeholders worked with Geo-Referenced Infrastructure Demographic Data for Development (GRID3) to develop platform for hosting and sharing geospatial data.

**NSDI Zambia Operational Health Facility Layer, Version 01 (Beta)**

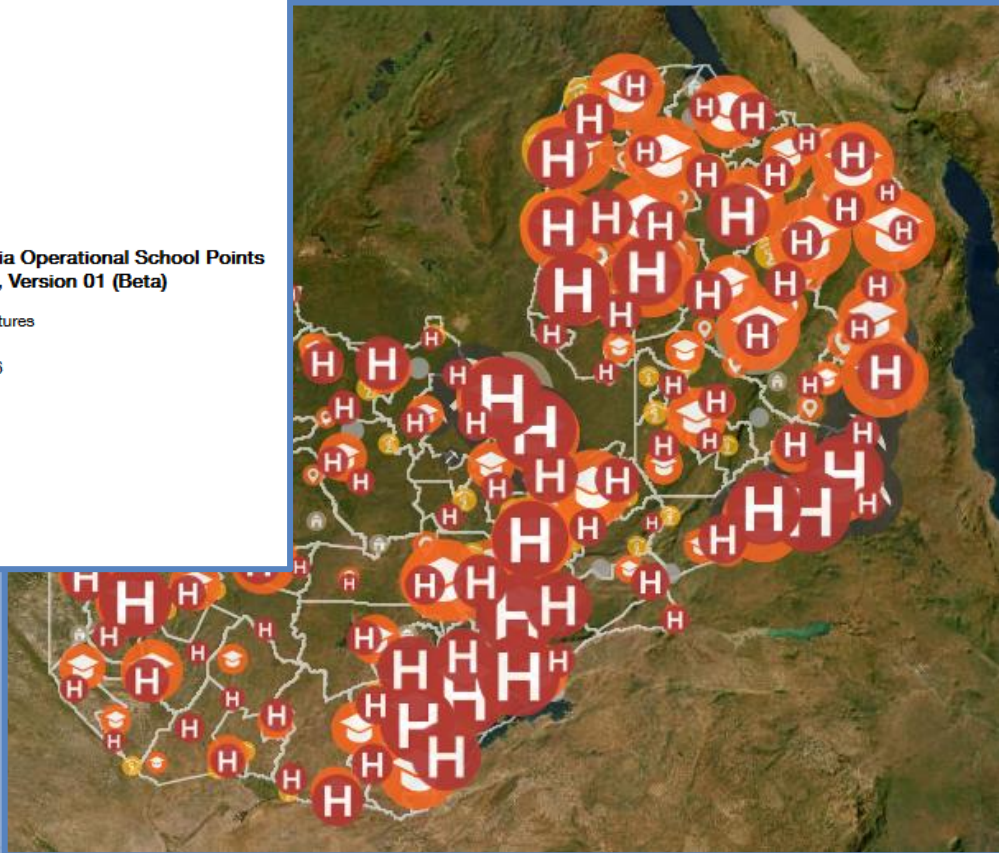
Number of features

- > 65
- 50
- 35
- 20
- 1

**NSDI Zambia Operational School Points and Names, Version 01 (Beta)**

Number of features

- > 166
- 120
- 80
- 40
- 1



### Zambia MLNR Land Property Information

Select Year: All

Total Certificates of Title  
**283,931**  
2022

Total Leases  
**96,093**  
2022

Survey Diagrams  
**672,922**  
2022

Total Offer Letters  
**242,492**  
2022

Total Properties  
**970,149**  
2022

Total Land Ownership by Gender

- Male Ownership: 26%
- Female Ownership: 15%
- Shared Ownership: 60%

Properties in Cadastre Layer

34%

Certificates of Title by Creation Year

Titles by Creation Year | Offer Letters by Year | Surveyed Properties

Total Certificates of Title by Province

Total Number of Properties  
Total Number of Titles

Sustainable  
Development

Climate Change  
Global Health

Esri  
Conservation  
Program

Education

# Social Impact at Esri

Esri Nonprofit  
Program

Esri Disaster  
Response  
Program  
(DRP)

COVID-19  
Humanitarian

Social Equity

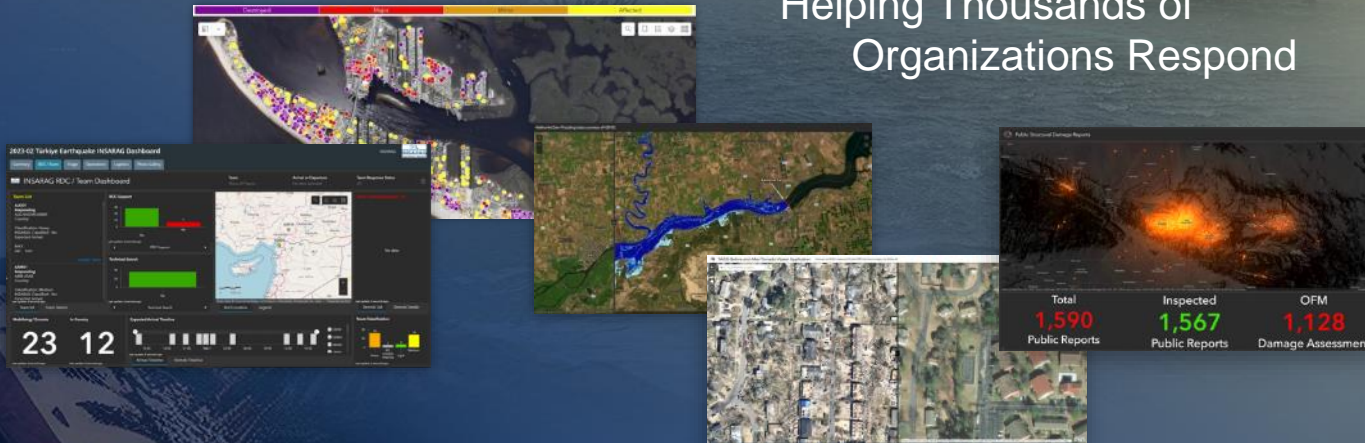
We are committed to helping organizations maximize their impact for people, planet, prosperity, and peace. Our special programs and initiatives are designed to help our users apply GIS for good around the world.



# DISASTER RESPONSE

Supporting Users Globally in Times of Crisis

Helping Thousands of Organizations Respond



*Partnered with*

- Users
- GISCorps
- American Red Cross
- FEMA
- HOT
- MapAction
- Esri Partners

*Mobilizing & Coordinating Resources Across Esri*

# SPECIAL RELATIONSHIPS

ENRICHING OUR USER COMMUNITY . . .

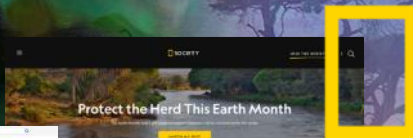


JANE GOODALL INSTITUTE UNICEF HALO TRUST WORLD WILDLIFE FUND  
GICHD AFRICAN PEOPLE AND WILDLIFE NATIONAL TRUST FOR HISTORIC PRESERVATION  
BILL & MELINDA GATES FOUNDATION WORLD FOOD PROGRAMME NAACP  
NATIONAL AUDUBON SOCIETY AMERICAN RED CROSS OPEN SPACE INSTITUTE  
CIESIN PATAGONIA GOVERNMENT ALLIANCE ON RACE AND EQUITY (GARE) W.K. KELLOGG FOUNDATION  
USAID IOM NATURESERVE WATERKEEPER ALLIANCE IUCN WINROCK INTERNATIONAL  
UNEP SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK  
PARTNERSHIP FOR A NATIONAL TRAILS SYSTEM FAO HABITAT FOR HUMANITY  
NATIONAL CENTER FOR MISSING AND EXPLOITED CHILDREN (NCMEC) AFRICAN PARKS  
INTER-AMERICAN DEVELOPMENT BANK AMERICAN CANCER SOCIETY FEEDING AMERICA  
WORLD HEALTH ORGANIZATION SURFRIDER FOUNDATION FIELD MUSEUM  
AMERICAN PRAIRIE RESERVE E.O. WILSON BIODIVERSITY FOUNDATION UN GGIM  
DIRECT RELIEF CONSERVATION INTERNATIONAL WORLD VISION WORLD BANK  
NETHOPE TEAM RUBICON THE NATURE CONSERVANCY THE HENRY FORD  
UNOSAT ONE TREE PLANTED INSARAG WORLD RESOURCES INSTITUTE UNHCR  
NATIONAL GEOGRAPHIC SOCIETY YMCA OF THE USA DEMOCRACY LABS UN-HABITAT  
TRUST FOR PUBLIC LANDS UN PEACE OPERATIONS WOODWELL CLIMATE RESEARCH CENTER  
CATHOLIC RELIEF SERVICES LINCOLN INSTITUTE CGIAR TOMPKINS CONSERVATION  
UNIDOSUS AFRICAN WILDLIFE FOUNDATION



NGO / NPO Programs

. . . SUPPORTING THOUSANDS OF ORGANIZATIONS





Helping Students & Teachers Everywhere

Acquire Geospatial Literacy and Develop GIS Skills

# EDUCATION

Building the Next Generation



Partnering with the National Geographic Society



## Schools Program

GeoInquiries

Free ArcGIS Online

CTE

New Lessons & Tutorials

GeoMentors



## Higher Ed Program

ArcGIS for Institutions, Departments and Students

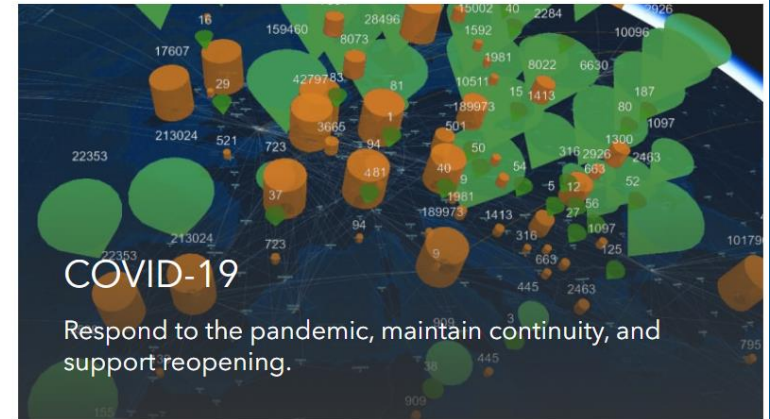
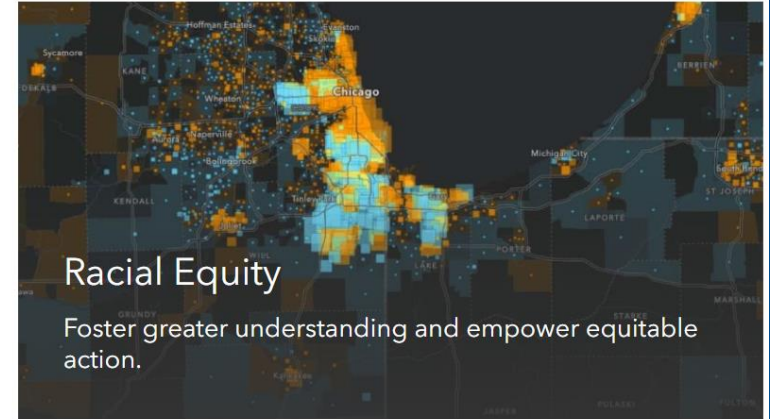
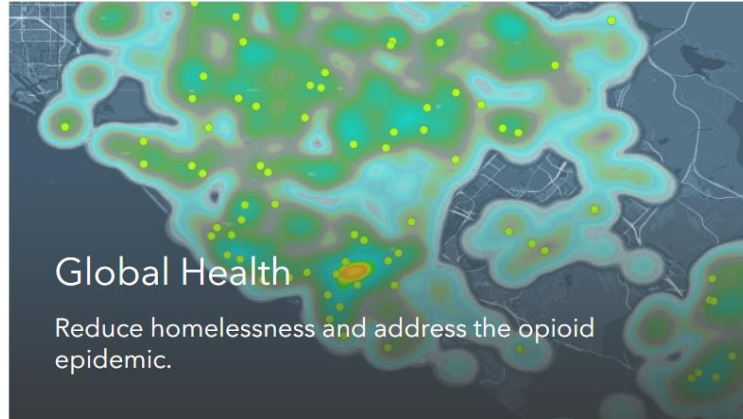
# CONSERVATION

Understanding & Protecting Nature

Supporting 7,000+ Organizations



# GIS for Good – Esri Initiatives



*Our initiatives combine Esri technology, data, and resources to help maximize our collective impact.*

# GIS for Good – Examples



UN's Urban Search and Rescue Network Gains New Awareness after the Beirut Blast



World Food Programme Guides Operations in Afghanistan with Online GIS Apps



Location Intelligence Empowers Aid Organizations to Act as One



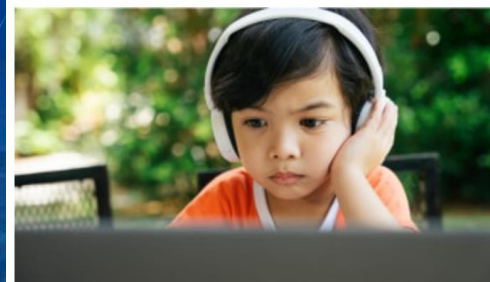
Maps Cut through the Fog in Peru to Help Preserve Unique Ecosystems



Born Free Uses Smart Maps to Save Lions



GIS Project Helps Address Food Insecurity and Waste



Online Schooling Prompts Municipalities to Map Digital Inequities



To Save the Monarch Butterfly: Taking Action with Maps

*How organizations are using Esri technology to overcome some of the world's biggest challenges.*

# Call to Action

- GIS Connects and Supports Communities
- Esri and our Users Work Together to Make the World a Better Place
- We use ArcGIS to Apply The Geographic Approach to Solve Problems & Make Better Decisions
- We Support GIS for Good





*Thank You. . .*

. . . And for **Everything** You Accomplish

