Our World Has Many Challenges

Humans Are Living Recklessly . . .

. . . Out of Balance with Nature

Creating Conflicts and Instability

Wildfires

Natural Disasters

Food Shortages

Pandemics

Severe Droughts

Ecological Instability

Human Induced Climate Changes

Overpopulation

Congested Cities

Unconstrained Development

Pollution

Water Crises

Steep Decline in Biodiversity

Social Conflict

Challenging Our Sustainability . . .

. . . Threatening Our Future

Humans Are Living Recklessly . . .

Creating Conflicts and Instability
Environmental Assessment and Conservation

- Climate Change Sea Level Rise
  - Samish Indian Nation
  - Department of Natural Resources
  - Washington

- Freshwater Fish Diversity
  - Field Museum of Natural History
  - Guyana

- Oil Spill Damage & Restoration
  - San Francisco Int'l Airport
  - San Francisco, California

- Noise Impacts
  - Amber Kuehn
  - Hilton Head Island, South Carolina

- Typhoon Monitoring
  - NIED
  - Tsukuba, Ibaraki, Japan

- Real-Time Weather Dashboard
  - Metropolitan Council
  - Twin Cities, Minnesota

- Real-Time Flood Inundation Mapping
  - USGS
  - NOAA | NWC

- Modeling Biodiversity
  - E.O. Wilson Biodiversity Foundation
  - Alabama

- Conservation & Stewardship Atlas
  - America the Beautiful (30 x 30)
  - USGS

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Managing and Applying Land Information
Water and Wastewater Management

Monitoring Water Consumption
- Palm Beach County Water Utilities Department, Florida
- City of Ontario, California

Targeting High Water Consumption
- Analyzing Citywide Operations (Insights)
- Aquanuity, Illinois
- City of Saint Charles, Missouri
- Eagle Technology, Westport, New Zealand

Valve Inspection App & Dashboard
- Pro-West & Associates, North Dakota

Sewer Operations
- Sewer Treatment Integration with SCADA
- Orange County Sanitation District, California

Visualizing Water Pipes
- Eagle Technology, Westport, New Zealand

Water Inspections
- CyberTech, Kansas City, Kansas

Monitoring Outages
- Trabajos Catastrales, Seville, Spain

Managing Wastewater Facility
- Managing Wastewater Facility

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- City of Saint Charles, Missouri
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Managing Wastewater Facility
- Managing Wastewater Facility
Public Engagement and Collaboration

- Open Data
- Public GIS Services
- Camden County Enterprise
- Camden County Department of Public Works
- New Jersey
- Douglas County Government System
- Lithuanian Data
- Walmart
- Emergency Management
- Red Cross
- FEMA
- Douglas County
- Statistics Lithuania
- Southeast US
- Pro-West & Associates
- Willmar, Minnesota
- Cityworks
- City of Sioux Falls
- South Dakota
- Budgeting Portal
- Reclamation Celebrates 120 Years
- US Bureau of Reclamation
- Comprehensive Planning
- Asset Management System
- CityofShawnee
- Steve Proud
- Polk County, Minnesota
- Election Transparency
- Pro-West & Associates
- Willmar, Minnesota
- Cityworks
- Shawnee, Kansas
- National Situational Awareness
- Red Cross
- Southeast US
- FEMA
- Walmart
- Douglas County
- Statistics Lithuania
- Walmart
- Emergency Management
- Red Cross
- FEMA
- Douglas County
- Statistics Lithuania
- Walmart
- Emergency Management
- Red Cross
- FEMA
VISION

GIS
Mapping Common Ground

Creating Agreed Upon Understanding . . .

A Foundation for Positive Action
Mapping

. . . and The Geographic Approach

Are Powerful Means for . . .

Creating Understanding . . .
Exploring Alternatives . . .
Finding Solutions . . .
and Reaching Agreement

Mapping Common Ground
A Foundation for Positive Action
Mapping Common Ground Requires We Consider All the Factors

Geography Provides The Science & Language to Do This

Organizing & Integrating

Social
Demographics
Population
Education
Equity & Equality
Health & Welfare

Economic
Industrialization
Development
Energy
Infrastructure
Financial

Environmental
Climate
Biodiversity
Forests
Water
Ecosystem Services
Oceans

Reflecting the Complexity of Our World

Illuminating Patterns & Discovering Relationships
The Geographic Approach

A Way of Thinking and Problem Solving
That Integrates Geographic Science & Information
Into How We Understand and Manage Our Planet

- Science Based
- Integrated
- Holistic
- Spatial Understanding
- Collaborative
- GeoScience and Understanding
- An Inclusive and Multi-Disciplinary Process
  Impacting Every Sector of Society

Supporting Multi-Objective Solutions
The Geographic Approach Integrates and Supports Powerful Methodologies

- Managing
- Operations
- Engineering
- Decision Making
- Planning
- GeoAccounting
- Creating Insights and Understanding

- A Language for Communicating Content and Context
- GeoVisualizations

- Designing for a Sustainable and Inclusive Future
- GeoDesign

- Engaging All the Stakeholders
- GeoCollaboration

- Accounting for All Factors
- GeoAccounting

- GeoScience and Understanding

All Critical for Maintaining Sustainability
GIS Enables The Geographic Approach

A Process for Creating Understanding & Facilitating Collaboration

Data Collection
Visualization & Mapping
Analysis & Modeling
Planning & Geodesign
Decision Making
Action

Mapping Common Ground
Geospatial Professionals Are Already Mapping Common Ground

Mapping All the Factors
Creating Understanding . . .
Facilitating Collaboration . . .

Reducing Violence
Prioritizing Investment
Conservation Planning
Applying Science
Finding Equitable Outcomes
Addressing Drug Addiction
Organizing Communities
Planning for Sustainability

Resolving Conflicts
Environmental Assessment
Helping Homeless
Siting Renewable Energy
Managing Resources

Addressing Homelessness
UN Global Sustainable Development Goals (SDGs)

Leveraging GIS Technology At Many Scales . . .
And Creating Geospatial Infrastructure . . .

A Growing Network of Distributed Shared Services

Millions of Users

Sharing 10s of Millions of Datasets

Serving Billions of Maps Daily

Reaching Billions of People . . .

. . . with Stories About Our World

Enabling . . .

Shared Understanding,
Collaboration and Efficient Action

“Key for Mapping
Common Ground
At All Scales”

“Shared Services”

Portals
Geospatial Knowledge Infrastructure

Expanding SDI beyond data to knowledge and understanding

Metadata catalogs

Federated portals

Digital ecosystems

Search & Discovery  Integration & Use
GKI Integrates Digital Twins
Interconnecting Content, Behavior & Workflows

Supporting Holistic & Collaborative Approaches
Mapping Common Ground
Is Essential for Addressing Our Greatest Challenges

Requires the Thoughtful Work of GIS Professionals

Sustainable Land Use
Resilient Infrastructure
Renewable Energy
Conserving Oceans
Environmental Protection
Biodiversity Conservation
Resource Balancing
Equitable Solutions
Managing Cities
Rewilding Nature
Sustainable Communities
Climate Neutral Development
Improving Efficiency
Resilient Supply Chains
Decarbonization
Improving Efficiency
Managing Cities
Equitable Solutions
Resource Balancing
Biodiversity Conservation
Conserving Oceans
Renewable Energy
Resilient Infrastructure
Sustainable Land Use
Mapping the Future We Want to See

Mapping the Future We Want to See
Geospatial Professionals

Have a Special Responsibility

To Help Others Find Common Ground

Exploring What’s Possible . . .

. . . Inspiring Action for a Sustainable Future