SUEZ ENTERPRISE GIS RE-HOST

VIRTUAL ESRI USER CONFERENCE – JULY 2021

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SUEZ North America

2ND LARGEST ENVIRONMENTAL SERVICES FIRM IN NORTH AMERICA

⇛ **2,800 employees**

⇛ **6.7 million people served by water and wastewater operations**

⇛ **$1.1 billion revenue**

⇛ **15 water utilities**

⇛ **65 public-private partnerships**

⇛ **160,000 tons of waste recycled**

⇛ **6,000 asset management contracts**

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SUEZ CHALLENGE

- Owning and maintaining an Enterprise GIS is a big job

- SUEZ needed to re-host their Enterprise GIS system to **enable growth** and **manage operating costs** in order to serve their customers better

- Working with GISinc, a migration was planned to move the system and the 1000 users from 30 departments, including 15 business integrations to a new infrastructure in AWS

- This migration has lowered hosting costs and increased Enterprise GIS capabilities across the organization

We'll review the lessons learned and share winning strategies

Partners

STEP 1: DISCOVERY WORKSHOP

KICKOFF SPRING 2020

STEP 2: ENTERPRISE GIS RE-HOST

KICKOFF SUMMER 2020

Step 1: Discovery Workshop - ArcGIS Enterprise Migration Design

Task 1: AWS Architecture Design (Production, Staging, Development)

Task 2: Content Migration

Task 3: Business Process and Integration Discovery (Cityworks, Infor, Notify Scripts)

Task 4: Service Level Agreement for Managed Services (Post Deployment)

Discovery Workshop - Deliverables

Task 1 - Enterprise Architecture Design

- AWS Instance Configuration, Network and Security

- Amazon Simple Storage Service

- Development Environment

- Staging Environment

- Production Environment

- AWS Workspaces

- Enterprise Documentation

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Discovery Workshop - Deliverables

Task 2 – Content Inventory & Migration

- Pre-Migration Coordination

- Production Content

- Staging Content

- Development Content

- Environment Walk-throughs

- Cutover – Go Live

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Discovery Workshop - Deliverables

Task 3 – Integrations

- 38 business units using GIS

- 15 different systems to integrate

- About 30 full-time editors

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Discovery Workshop - Deliverables

Task 4 - Managed Services Support

- Planned System and Software Maintenance

- Change Management

- Operational & Ad-Hoc GIS Support

Step 2: Enterprise GIS Re-Host


GISinc
Inspired by
Location

SUEZ Enterprise GIS Re-Host

Implementation Services: Architecture, Content, Integrations, Managed Services

	AUG	SEPT	OCT	NOV	DEC 2020 - OCT 2021
TASK 1: ARCHITECTURE					
TASK 2: CONTENT MIGRATION					
TASK 3: INTEGRATIONS					
TASK 4: FREEZE & CUTOVER					
GO LIVE & APPROVAL					
POST IMPLEMENTATION					
TASK 5: MANAGED SERVICES					

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Architecture Design – Production

Figure 2: This diagram shows a VPC for the Production Network supporting high availability across 2 availability zones

Production Environment
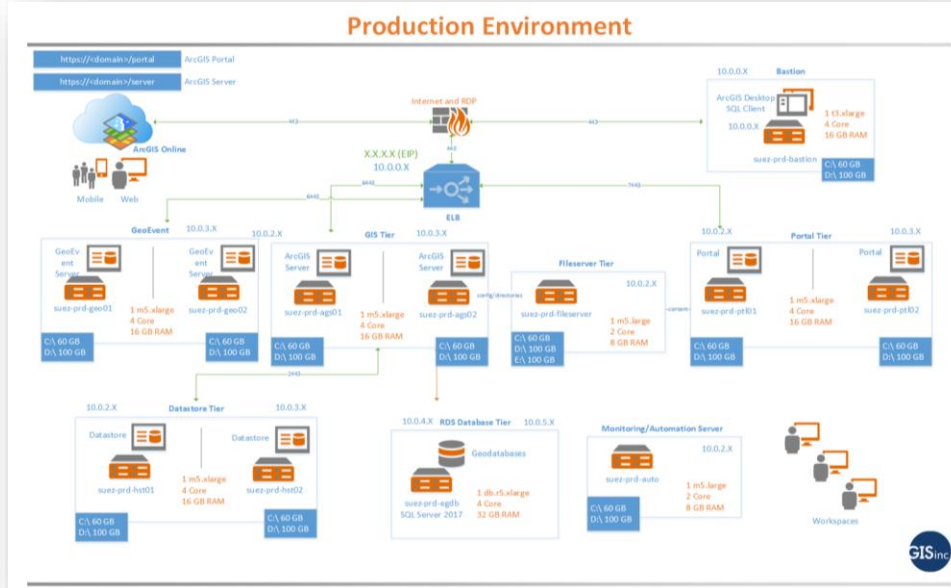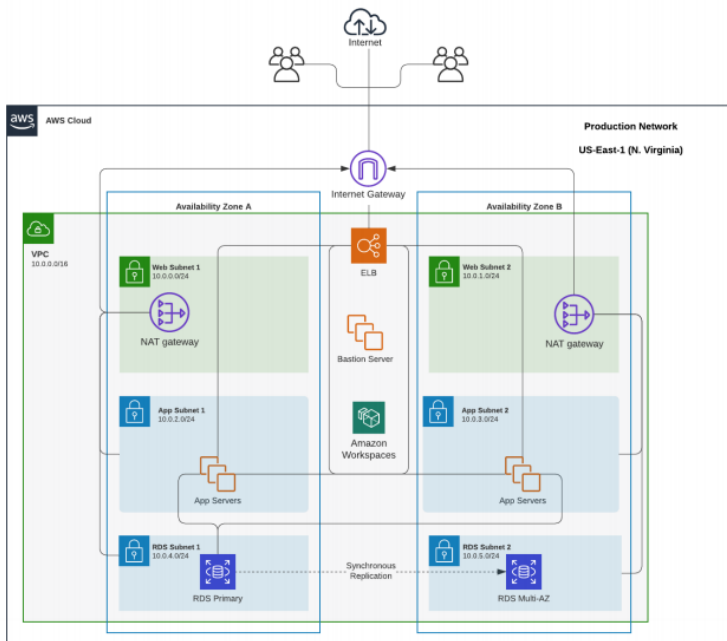
Architecture Design – Stage & Development

Staging Environment

Development Environment

Content Migration

⇒ **Order of Events**

– Pre-Migration Coordination
  - ⇒ Production Content
  - ⇒ Staging Content
  - ⇒ Development Content
– Environment Walk-throughs
– Cutover – Go Live

Application
Code Attachment
CSV
CSV Collection
Dashboard
Feature Service
File Geodatabase
Form
Geocoding Service
Geoprocessing Service
Image
Image Service
Map Service
Microsoft Excel
Mobile Map Package
Service Definition
Shapefile
Web Map
Web Mapping Application

Non-hosted Map & Feature Services (~5000)

Hosted Feature Services (~500)

Web Maps (~100)

Web Mapping Applications & Dashboards (~150)

Survey123 Hosted Services (~56)

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Business System Integrations & Process

Pre-Migration Coordination

Production Content

Staging Content

Development Content

Environment Walk-throughs

Cutover – Go Live

Interface	Hosting Environment	Function
ArcGIS Online (AGO)	Esri	GIS software as a solution for all external (non-SUEZ) access for GIS data, services, maps and applications Web and mobile applications
CCB	SUEZ	Solution for water billing hosted internally. *See Notify Scripts – CCB – Mulesoft section*
Cityworks	Cityworks	Solution for workorder and asset management Web and mobile applications
Clevest	Clevest	Application for mobile workforce management Web applications
Infor EAM Solution	Infor	Solution for workorder and asset management
Infor EAM GIS Desktop Toolkit	AWS Workspaces	Solution for data sync and search against hosted system Desktop toolbar only
KloudGin	KloudGin	Solution for workorder and asset management Web and mobile applications Integration with GeoEvent server
LiGO	MarshallGIS	Platform as a service for automated vehicle tracking (AVL)
LLumin	LLumin	Solution for workorder and asset management
Notify Scripts – CCB - Mulesoft	AWS Automation Server	Automation scripts transforming GIS and Billing records to support Notify software application
Notify Application	GeoDecisions	Solution for automatic email notification of water information
SAMS Water Quality	NJB Soft	
SCADA	NA	The GIS Integration with SCADA is currently in Design. No systems will be migrated.
Water Outage Map	Esri AGO	The water outage map enables the public to view water outages near a specified address.

# Managed Services

PLANNED MAINTENANCE: SYSTEM AND SOFTWARE SUPPORT

⇒ **System Maintenance Tasks**

⇒ **Software Maintenance**

⇒ **System Monitoring & Alerting (services monitoring 24-7)**

⇒ **Ad Hoc GIS Requests**

EMERGENCY RESPONSE: UNPLANNED OUTAGES & ISSUES

⇒ **Systems Down**

⇒ **Performance Degradation**

| Expected Frequency	Task	GISinc	SUEZ GIS	SUEZ BTS
Daily	System monitoring, alerting, and reporting	X		
Daily	Emergency support services (Unplanned Outages & Issues) GISinc will be given a ServiceNow username to enable assignment of tickets	X	X	X
Daily	Backup and restoration services	X		
Daily	Security management	X		
Weekly	*Publishing map and feature services		X	
Weekly	*Add, drop, or modify ArcGIS Server services		X	
Weekly	*Create a new group on Portal		X	
Weekly	*Share layers to groups in Portal		X	
Weekly	^*Maintain/Edit Notify scripts	X		
Weekly	*Share services from Portal to ArcGIS Online		X	
Weekly	Geodatabase maintenance (compressions etc.)	X		
Weekly	*Data creation, generation, transformation, cleanup		X	
Weekly	*File upload and file management		X	
Weekly	^*Field changes, domain changes, versioning, schema changes	X		
Weekly	*Adding new geodatabases, tables, etc.	X		
Weekly	*Rebuilding geometric networks		X	
Weekly	*Adding/removing Portal users			X
Weekly	RDS hosting and database maintenance	X		
Weekly	Adding/removing AWS users	X		
Weekly	*Ad Hoc Requests for Project Support	X		
Monthly	Refresh Staging environment with RDS databases	X		
Monthly	AWS Billing			X
Monthly	^OS updates, upgrades, patching	X		
Monthly	^GIS server software upgrades and patching (server side)	X		
Quarterly	^GIS desktop software upgrades and patching Add-ins and Toolbars will be updated by SUEZ	X	X	
Quarterly	^AWS Scaling and Optimization	X		
Yearly	Esri Licensing Update GISinc will have access to the licenses in MyESRI.	X		
Yearly	^Updating certificates SUEZ involved as needed for purchase of new certificates	X		X

Communication & Incident Response

SUEZ - GIS Incident Support Flowchart
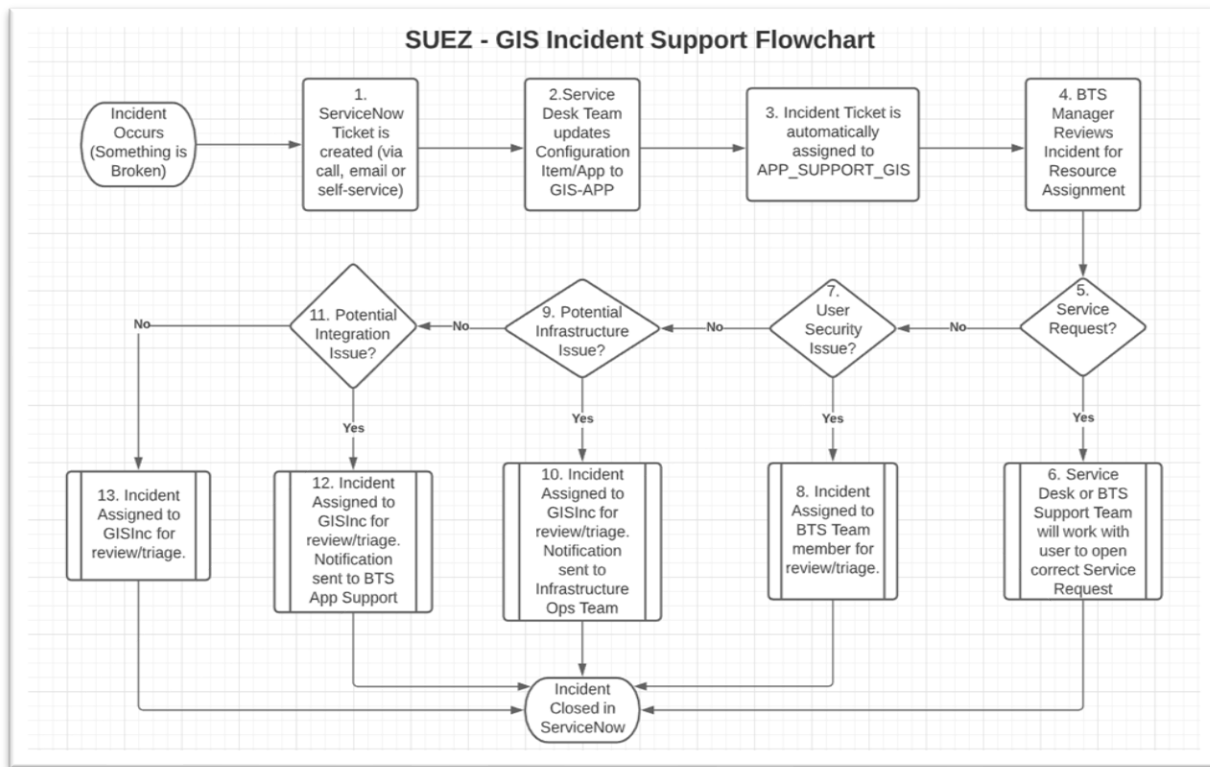
Portal & Sites
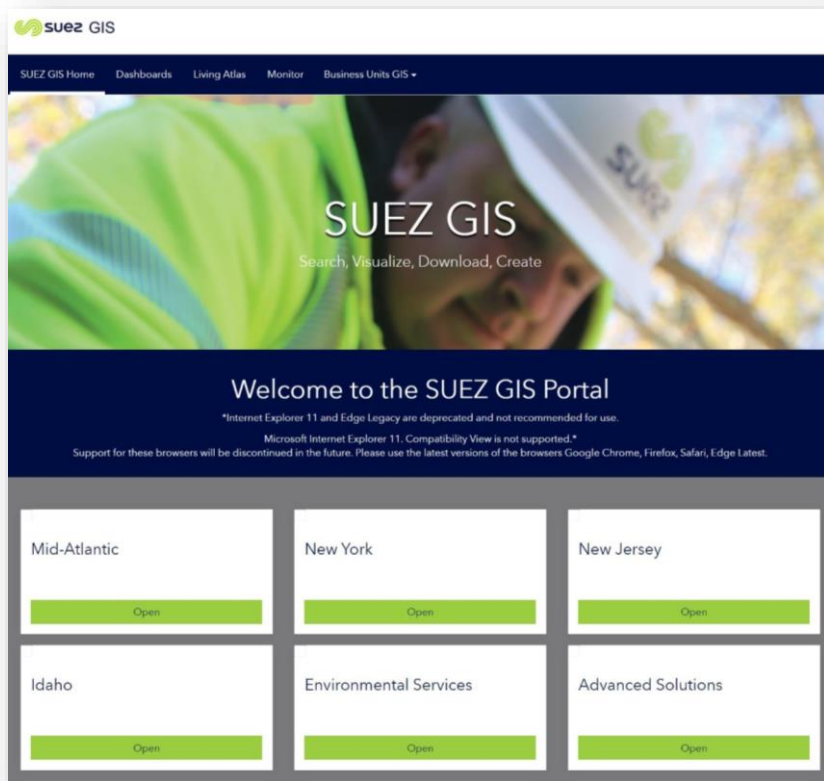
System Monitoring
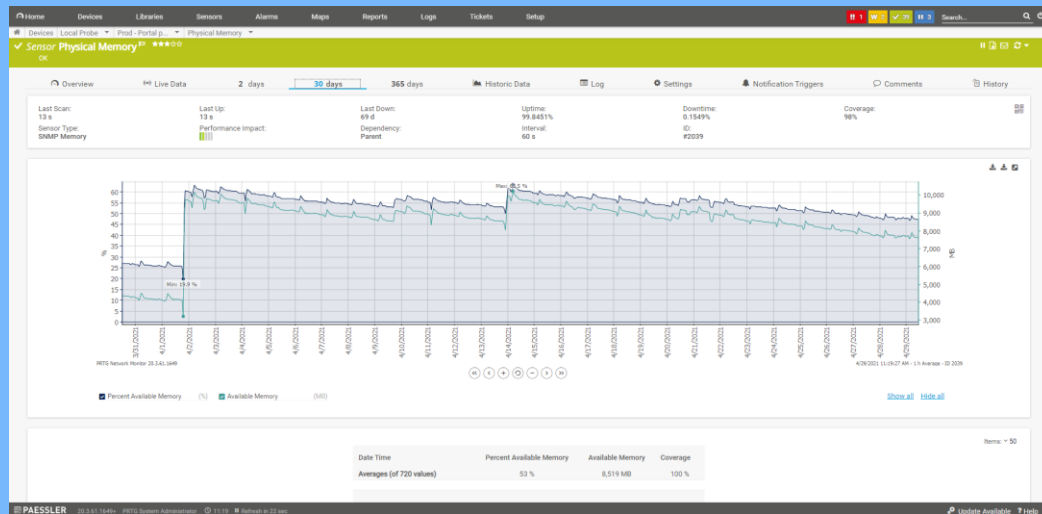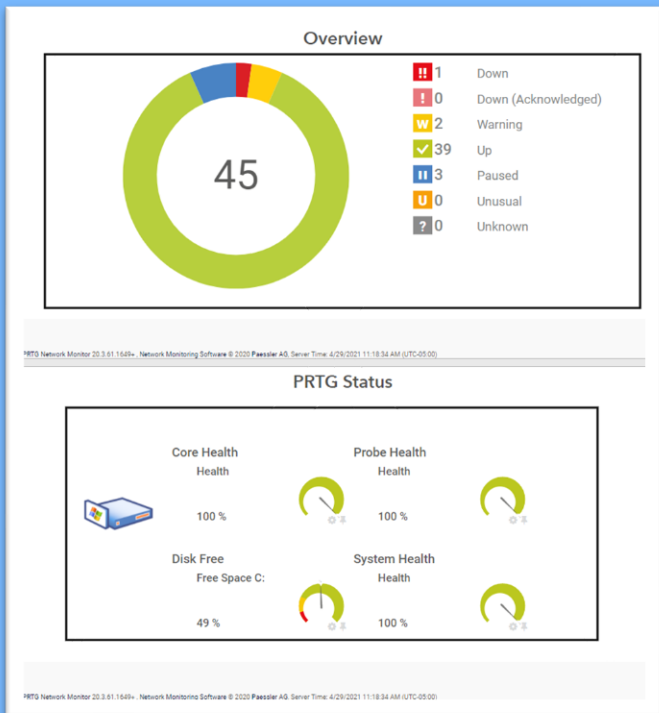
Road Ahead

ArcMap to Pro Strategy	**2D & 3D**
Vertical Asset Management	**Utility Network**

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