GIS as a Strategy to Programme Management

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Summary

- Project Background
- GIS Strategy
- Planning for ROI
- Delivery the Strategy
- Demonstrating Business Benefit and ROI
- Future Scoping
- Challenges and Successes
- Live Demo
- Questions
Project background

- Needed to reduce the problem of the capital’s Victorian sewers overflowing into the River Thames.
- Part of solution required to ensure compliance with **Urban Wastewater Treatment Directive**.
- Discharges of untreated sewage currently occur more than once a week on average, via 57 overflow points.
- New challenges make scheme increasingly urgent - e.g., population growth, more intense storms linked to climate change & increasing urbanisation.
- Years of studies have shown that the London Tideway Tunnels are the most cost effective way of tackling this unacceptable problem.
- Simply, the system needs more capacity to meet the needs of modern day London.
London’s sewerage system today

Percentage Connected

<table>
<thead>
<tr>
<th>Percentage Connected</th>
<th>Type</th>
</tr>
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<tbody>
<tr>
<td>0-5 %</td>
<td>Separate system</td>
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<tr>
<td>5-10 %</td>
<td></td>
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<tr>
<td>10-20 %</td>
<td>Partially separate system</td>
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<tr>
<td>20-40%</td>
<td></td>
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<tr>
<td>40-70%</td>
<td></td>
</tr>
<tr>
<td>70-100%</td>
<td>Combined system</td>
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Discharging CSO
GIS Strategy Overview

Planning & Consultation Phase
Planning & stakeholder engagement, public consultation, planning application submittal

Design & Construct Phase
Design, land acquisition, site construction, tunneling, CSO Works, utility works, testing and commissioning
GIS Strategy – why do we need one?

- Outlines short, medium and long term delivery
- Helps with project and client acceptance
- Outlines project benefits
- Outlines cost and effort road map
- Outlines roles & responsibilities
- Drives recruitment plan
- Feeds into programme schedule
  - Deliverables can be tracked
- Demonstrates information management
- Centralises geographic data
GIS Strategy – getting it accepted

- Present document outlining your strategy and delivery plan
- Frequent GIS ‘Info Sessions’
  - highlight project benefits
  - how to use information
  - what it can do
- Get Project Director sign off
  - don’t delay delivering initial tools
- Produce GIS deliverables
- Report on progress regularly
- Don’t underestimate individuals understanding of the technology
- Steer away from technical terminology
GIS Strategy – planning ROI

- Fundamental to future success
- Not always tangible
- Selling time savings through efficiency
- Access to information
  - right time, right cost, right format
- Trust in information
- Provide usable products
- Record requests and deliveries against WBS
- Map and engage stakeholders early while project is still finding its feet
Delivering the GIS Strategy

The influence project components have on spatial information

The demand for information, services and support by the project on GIS
Delivering the GIS Strategy

- Geographically disconnected project office
- Hardcopy original data – circa 1865 ACD
- Multiple contractors – mostly external of project office
- Easy access to variety of information
- Interaction with other relevant data
- Familiarity with project locations
- Project data vs Operation data
- Traditional vs Modern technology users
- Existing assets in GIS format

No Common Information Platform
Delivering the GIS Strategy

Stakeholder Map

Challenges

Solution

Multiple contractors

760 layers of project data

Original data scanned and geotagged

Easy access to variety of information

Collaboration

Information Management

Analysis and support

Web-based solution

Information Management Platform

SharePoint

ArcGIS Server

ArcGIS 9.3.1

Internet

Web Services

London Tideway Tunnels

Creating a cleaner, healthier River Thames
Demonstrating Business Benefit & ROI

- Why do I need this thing called GIS?
- Will it cost me a lot of money?
- What does it do that my existing tools don’t do?
- Is it not just a nice to have?
Demonstrating Business Benefit & ROI

- Demonstrate time savings for using GIS vs another technology
- Speed of accessing information
- Trust in ‘Single Source of Truth’
- Importance of visualisation
- Deliver custom changes where appropriate
- Keep solutions as vanilla as possible
- Demonstrate efficiency in delivery support
- Communicate to client, project directors and managers successes
- Culture is the toughest hurdle
Current Status

- GIS Mobilisation project delivered
- GIS Viewer applications delivered
- Growth in ongoing project support
- Strong uptake on the use of GIS for decision making
  - daily use of GeoViewers
  - GeoViewers used in workshops
  - GIS outputs required daily
- Central to Information Management processes
- ROI being used to scope demand in next financial year
- Seen as an integral component of the project
  - not a ‘nice to have’
Lifecycle Overview

- Project Activity Support
- To date (15 months): Mobilisation, Application Development, Enhancements Visualisations
- Future: Value

6 Months
9 Months

London Tideway Tunnels
Creating a cleaner, healthier River Thames

Thames Water

17
Future Scoping

Pre-construction Phase
Planning, Design Development, Land Acquisition, Tender Bid Assessment and Award

Construction Phase
TBM Design and Manufacture, Shaft Construction, Tunnel Boring, CSO Works, M&E, Utility Works, Testing and Commissioning
Other project tools

Currently integrate with:

- Microsoft SharePoint
  - Collaboration
  - Access to project documents through GIS
  - Access GIS web applications
  - Progress reporting and visualisation
  - Knowledge sharing (wiki’s and blogs)

Future tools to integrate with:

- Bentley ProjectWise for design management
- Primavera P6 web for scheduling
Challenges & Successes

Challenges
- Fast paced project
- Project activity already started
- High volume of data
- Framework data agreements needed establishing
- High demand for information
- GIS unknown to most on the project team

Successes
- GIS Strategy to drive delivery and ROI
- Standards, Policies and Procedures early
- Begin education process immediately
- Roll out data access quickly
- Applications delivered on time to budget
- User uptake better than expected
Live Demo

GeoLite

GeoViewer

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Questions

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