

Construction Management and Public Information using GIS Time- Series Data

Eric Anderson HDR Inc.



A Coastal Community Pipes Up For the Environment

- State-mandated (SWQCB) a wastewater collection system in 1983
- Followed by 3 decades of political and legal wrangling
- County took ownership
- Sewer collection pipes to be installed in every street over a 1.5 year period
- Construction begins in the Fall of 2012



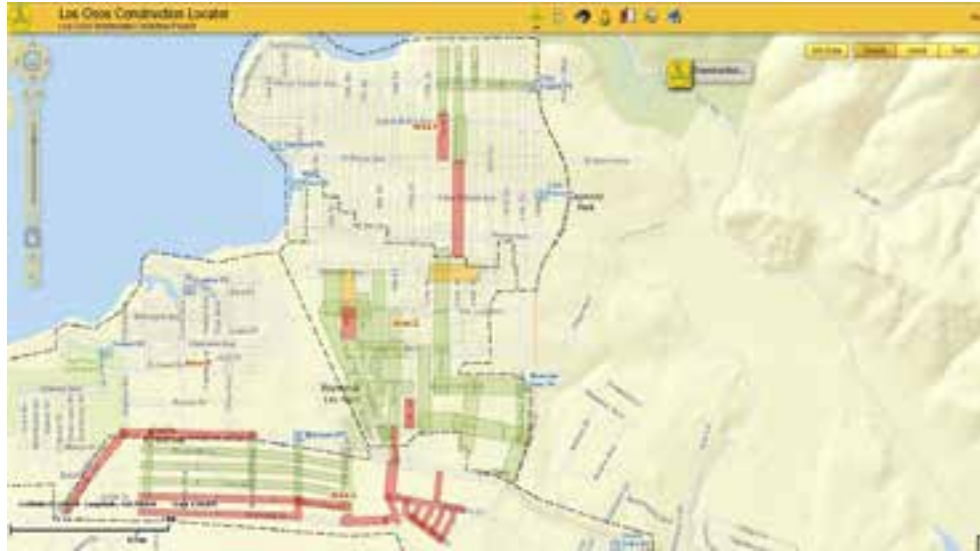


GIS Portal for Project Management

- GIS website to display project data
- Over 250 street segments to schedule and display
- Links to Document Management System on construction segments
- Construction schedule for each segment spanned the duration of the project



GIS Project Portal



Audience for Project GIS Site:

- County project managers and staff
- Construction managers, planners and staff
- Pipeline-contractor managers and schedulers

Optimizing the Pipeline Construction Scheduling



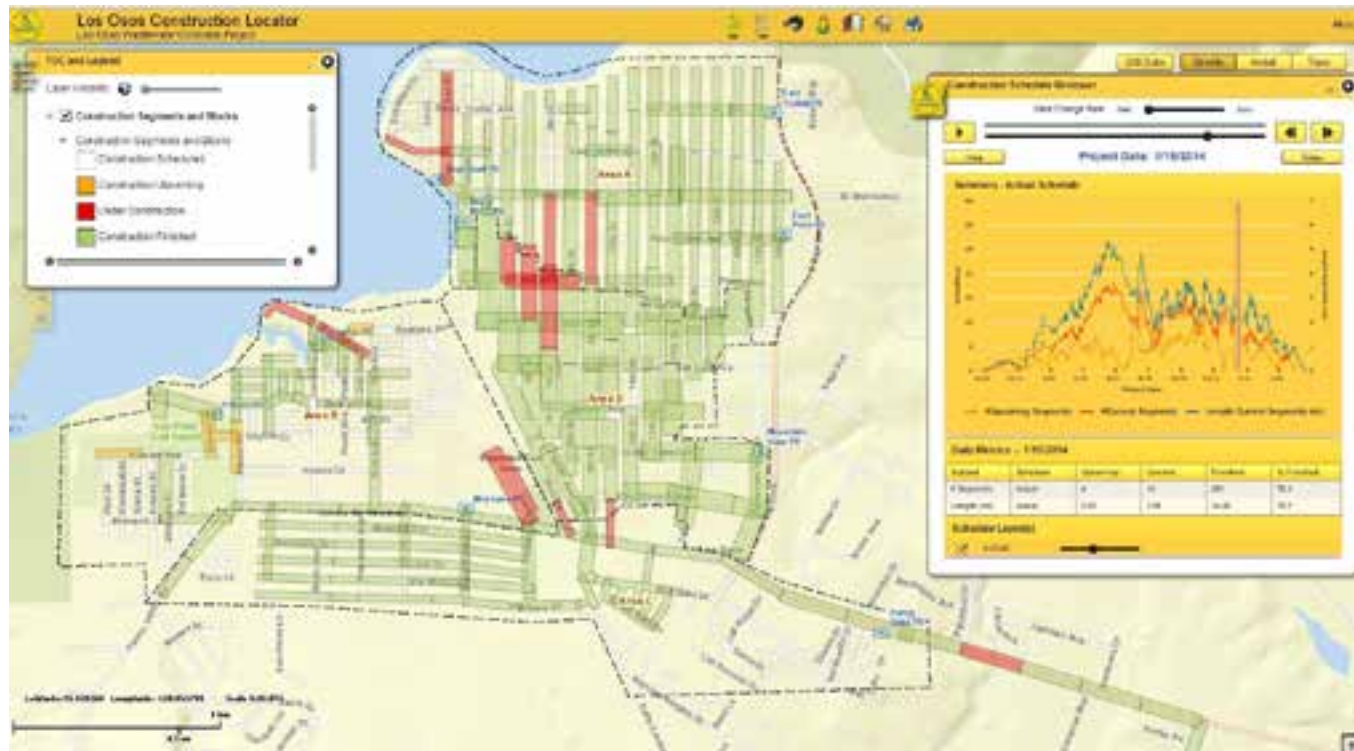
- Old way – Spreadsheets, paper maps
- New way – Visualized as Time-series data in GIS

Visualize the Schedule using Time Series Slider



- Move through entire project manually or with animation
- Daily metrics: how many segments are current or upcoming and the length of segments currently under construction

Demo

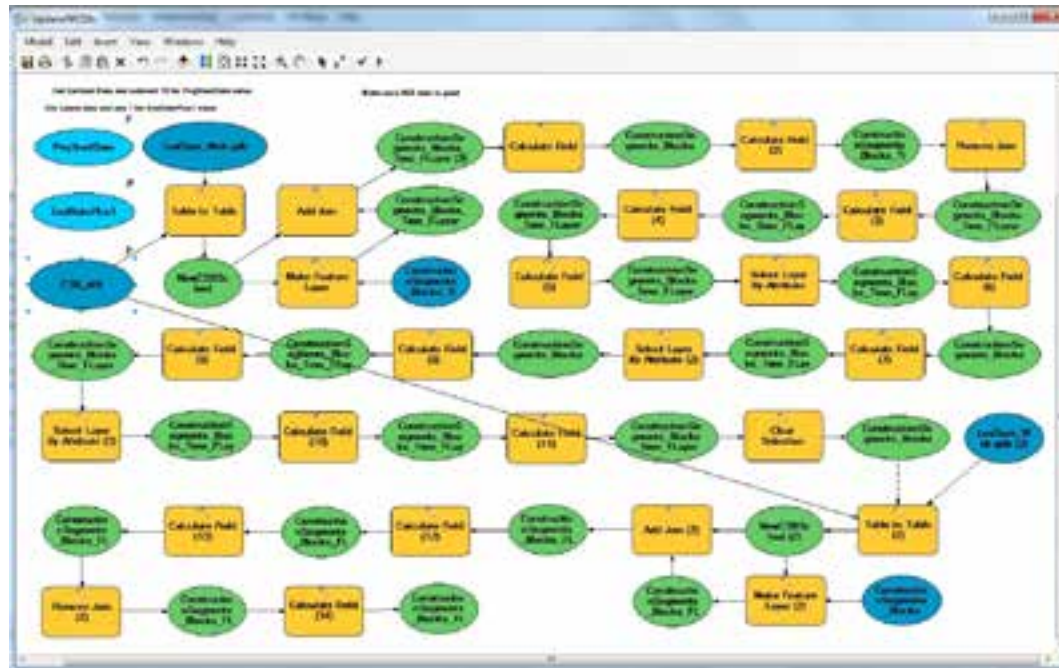


GIS website for the Public

- Link from Public Portal – Dig Los Osos
- Public GIS website displayed current status of construction by street segment
- Slider hidden but functionality remained so that it would open to the current date



GIS Data Update Model



- Data updated to reflect weekly time changes
- Each segment is represented by 4 features: Outline, Upcoming, Current and Finished
- Model alters time attributes only, features remain in place



Feedback

- Time-Series visualization was highly effective way to collaborate and plan weekly schedule optimizations
- Enhanced schedule communication between management and contractors
- Was instrumental in the success of the public outreach program for a sensitive subject concerning every resident
- Fun to play with