



CHANGING THE PARADIGM WIRELESS COMMUNICATIONS COMES OF AGE



The Challenge

- ⦿ Can we position ourselves to transition from an on-site physical see and touch world to an electronic world where networks and software are the primary workhorses?
- ⦿ Here is a case study that addresses these issues.

Otay Water District



- Publicly owned water & sewer agency serving approximately 186,000 customers in a 125.5 sq. mi. area in southern San Diego county
- Owns & operates a wastewater collection & reclamation system providing sewer service to approximately 6000 homes & businesses

What do we need to communicate ?

- SCADA
- Security
 - Gates, Locks, FOBS
 - Alarms (Perimeter Alerts, Zones, Fire)
- Surveillance – Video, Fixed and PTZ

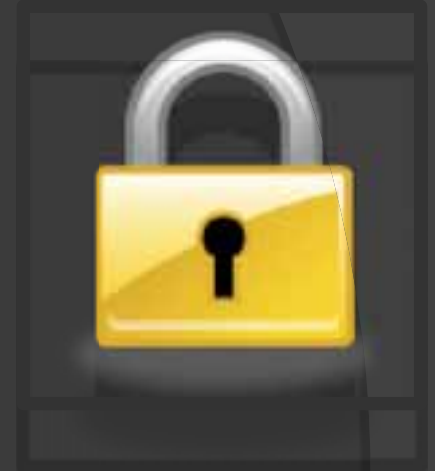


Key Concerns

Capacity, Reliability and Security

Reliability

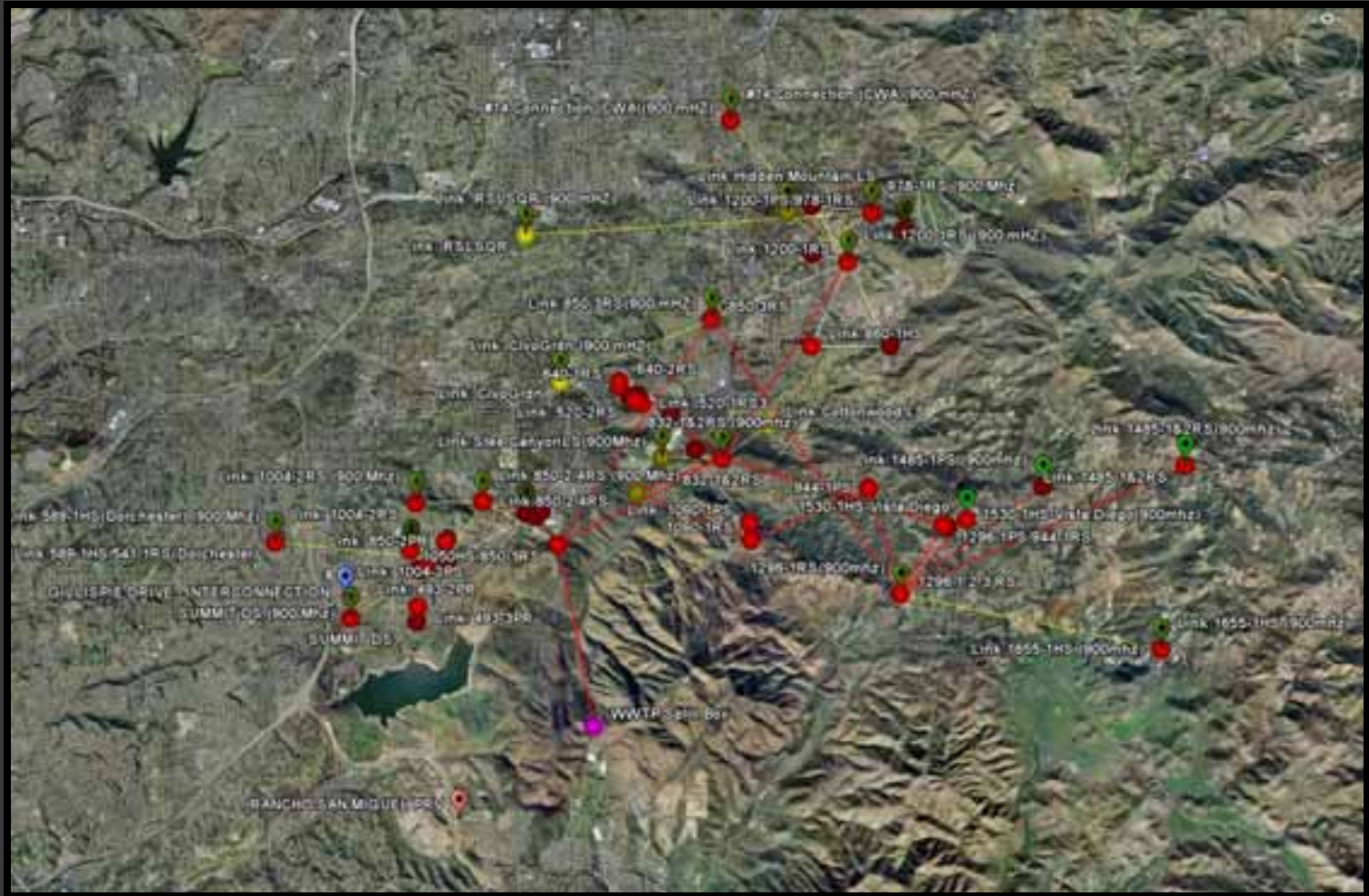
- ⦿ Multi path redundancy
- ⦿ Up to 80MB Capacity
- ⦿ Power backup (gen sets, solar, battery)
- ⦿ Flexible transmission rates increase signal strength
- ⦿ At least 6-7 year lifecycle, upgrades through firmware
- ⦿ Investigated satellite, cable as alternatives



Security

- ⦿ Private network (4.9 GHz -*public safety*- to 5.8 GHz frequency)
- ⦿ Traffic is encrypted
- ⦿ Infrastructure is behind the District's physical security (fenced and alarmed)
 - Most mounted on reservoirs, not easily accessible

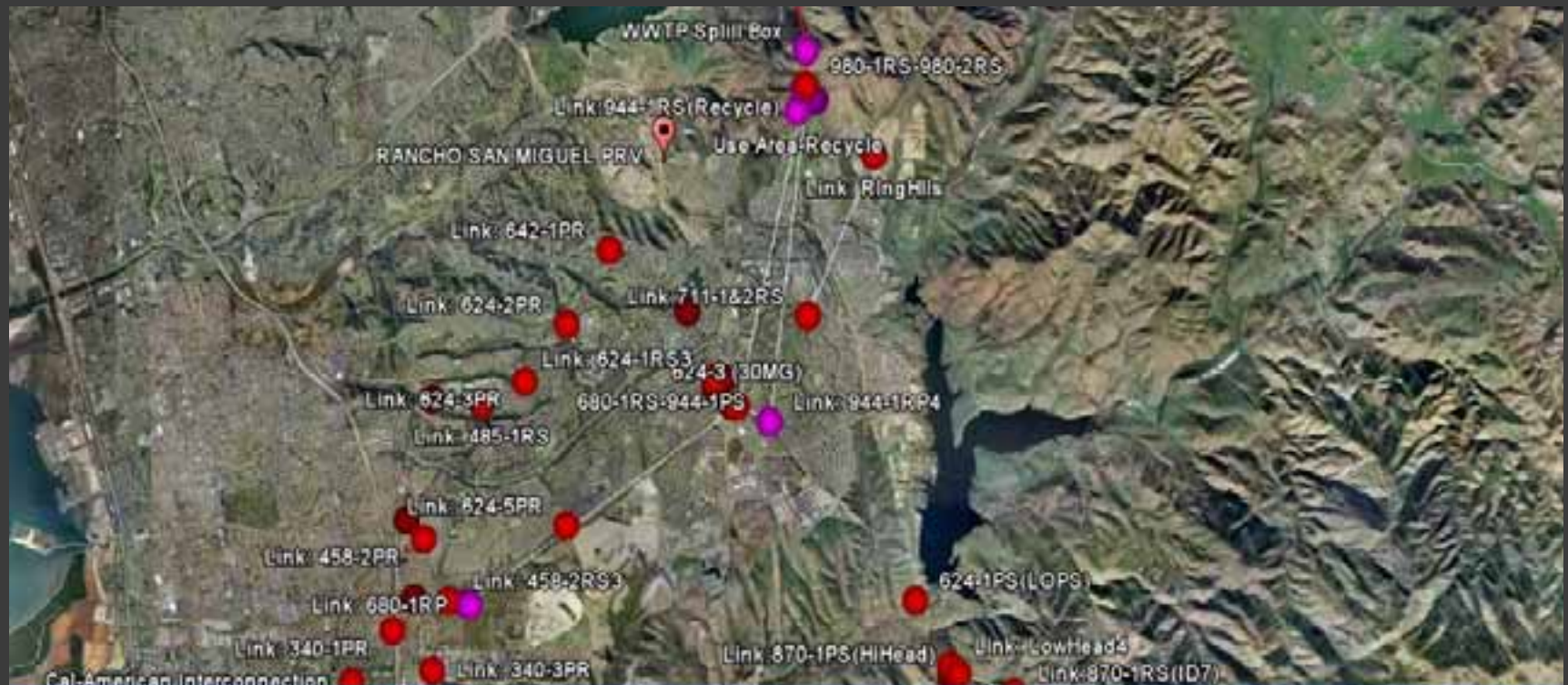
Wireless Phase II- FY 2011 North District



Current Request: \$216,739

Wireless Phase III- FY 2012

South District



Video Integrated With GIS

The image shows a screenshot of a web browser displaying a GIS application. The browser's address bar shows the URL `http://owd-gis/otaycamera/`. The application interface includes a sidebar with a "Map Contents" panel listing various layers, such as "OtayCameras", "Streets Name", "VideoCameras", "PUC", "Interconnection", "CWA Connections", "Potable Hydro pneumatic P", "Potable Pump Stations", "Reservoirs", "Recycled Pump Stations", "Recycled Reservoirs", "Recycled Meters", "Recycled Fittings", "Recycled Control Valves", "Recycled Cathodic Test Sta", "Recycled Pressure Reducin", "Recycled Underground Vaul", "Recycled valves", "Potable Water Test Stations", and "Fire Hydrants and Fire Sern". The main map area displays a geographic map with a grid, overlaid with various infrastructure layers. A yellow arrow points from a target icon in the top right corner to a specific location on the map. The bottom of the browser window shows the status bar with the text "Local intranet" and a zoom level of "100%".

WIRELESS PROJECT



CONCLUSION

- ❖ Critical project
- ❖ Foundation for growth and efficiency
- ❖ leverages future technology
- ❖ major step forward in security
- ❖ Creates new opportunities to streamline business processes
- ❖ proven but advanced and cost effective technology



Next Steps



- Addition of programmed “security zones”
- Revised business practices
- Risk assessment – what new problems have we created.
- Vendor buy in and support of this security model
- Seeking partnerships across agencies

◎ **“Knowledge comes by eyes always open and working hands; and there is no knowledge that is not power.”**

- [Ralph Waldo Emerson](#)



Questions

