

**You can't depend on your eyes when
your imagination is out of focus.**

Mark Twain

Better, Faster, Cheaper

**The City of Garland's
Journey to a New ATMS**

**Paul Luedtke, P.E.
Director of Transportation**

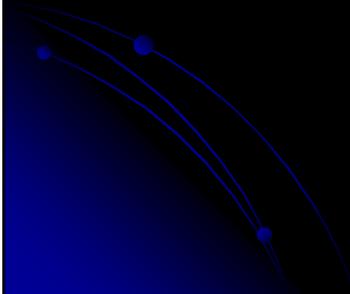
What We Had...

- 182 Traffic Signals
 - Closed Loop System – dial-up
 - 36 miles of copper TWP (1974 vintage)
 - 1989 vintage controllers
- 7 CCTV cameras
 - Cable System
 - 1993 vintage equipment

The Journey to a New ATMS

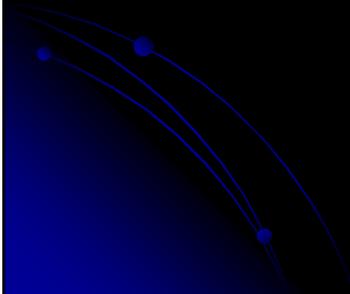
- It's a Journey - Not a project
- Vision
- Process
- Technology

Vision



I saw the angel in the marble and carved
until I set him free.

Michelangelo



The Vision

A new system that the average citizen would notice through experience

Goals

- Centralized – access to all data, video
- Universal Accessibility
- Autopilot – alerts someone when needed
- Cost effective – power of industry standard technology
- Maintainable by existing personnel
- Upgradeable with new technology

Process

System vs. Package

- Closed Loop – Off the shelf
- Centralized Distributed Signal System
- ATMS – CCTV, DMS,
- ATMS – Some assembly required

It's A System!

- You Own It
- You Operate It
- You Maintain It
- You are the System Integrator

Be Your Own System Integrator

- You can do it!
- Admit what you don't know
- Find Knowledgeable Expert
- Champion

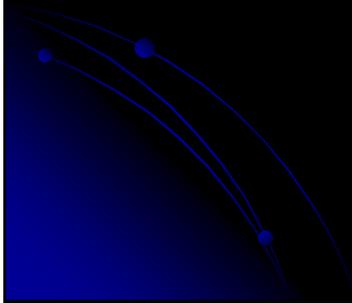
Technology

Technology

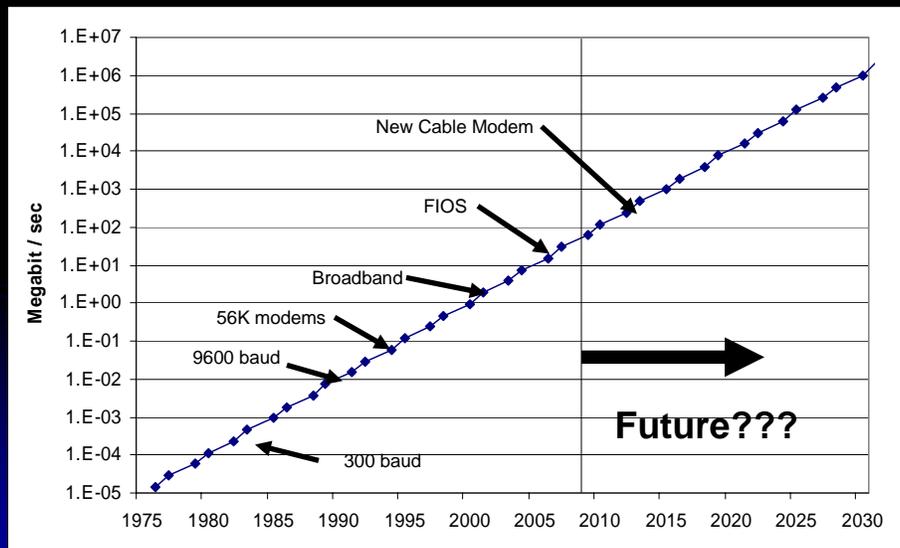
- We are a small industry – Hundreds
- Consumer market – HUGE – Millions
 - Development / Innovation
- Consumer “Toys”
 - HDTV
 - Cell phones
 - Video iPods
 - Broadband

Moore's Law

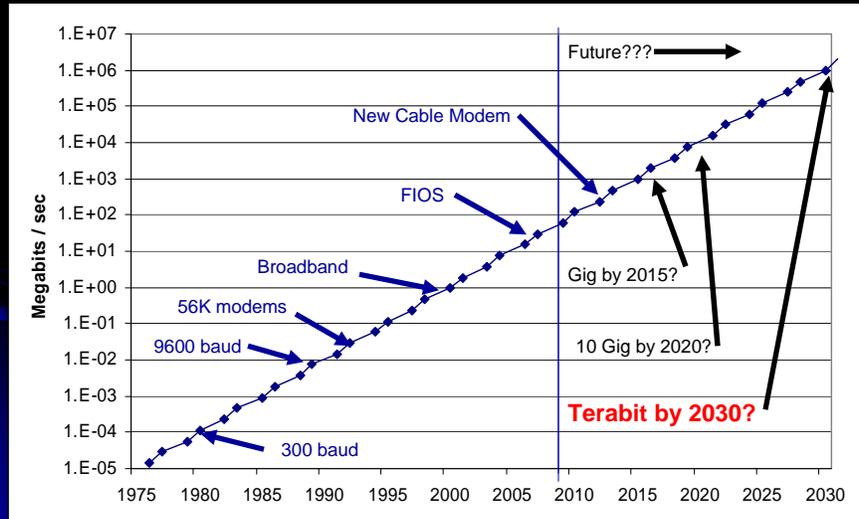
- Computer processor power will double every 18 months



Bandwidth to the Home



Moore's Law for Broadband???



Consumer Technology

- Better Faster Cheaper
- Prices Dropping Dramatically
 - Ability for average Joe to do things that only professionals could afford to do or had the expertise to do 15 years ago
- It can be hardened – test it – maybe it already is!
- At these prices does it matter?

False Work

- Purchase promising units to test
- Test, Test, Test
- It's OK to throw some things away
- Some will not work
- Results in better end product

Cross Functional Technology

- Internet
 - IPTV
 - Increasing Broadband speeds
- HDTV
 - Resources pouring into video as never before
- Fiber to the Home

Fiber to the Home

- Extension Cords
- Cost of traditional fiber – maintenance
- Cost of low fiber count plug and play

Internet Video

- Slingbox
 - San Francisco TV station (CBS)
 - 26 cameras
 - Streaming 800kbits wireless
 - \$800 full installation
 - \$60/month for service
- IPTV – set top box

New Life for Copper

- DSL
- Ethernet Over Power – Traffic Signal Cable
 - White boxes

Results

- Centralized – access to all data, video
- Universal Accessibility
- Autopilot – alerts someone when needed
- Cost effective – power of industry standard technology
- Maintainable by existing personnel
- Upgradeable with new technology

Recommendations...

- Conduit with every road construction
- Wireless will never catch wireline
- Stay honest with yourself
- Admit what you don't know
- Stop using 20 year old technology