Digital Arizona Program

presentation to

2012 Governors Statewide Economic Development Conference

September13,2012

ASET
Arizona Strategic Enterprise Technology

Project began: with $6.3M federal stimulus grant

Challenge Now is: How do we not end up with another three ring binder with a great policy sitting on the shelf after a four years and having spent $6 million on mapping and planning with nothing to show for it.

Mission now is: Implement a sustainable, leveraged broadband plan for accelerating transformation of economic growth, education, healthcare, and business in Arizona.

Primary Approach: Deploy conduit along state highways and rural frontage roads to be leased to providers at cost to facilitate availability of fiber Internet middle-mile capacity to support providers' investments in more and faster services for rural Arizona.

Two Highways for (nearly) the price of one!

Trench + Conduits ≈ Cost of Paint Striping.

Passed Arizona Digital Highways Law to support this.

Whydoes it matter…

JOBSandGDP Impact (new hard data)

2007 MIT Study

In Counties with Broadband Deployment the Sales Per Capita Grew Almost Twice as Fast as Counties Without

Broadband Deployment Increased Employment by Over 5 Percent

Larger Impact in Smaller, Rural Communities

2011 Chalmer University Study

Every Doubling of Broadband Speed Increased GDP By 0.3%

If applied to Rural Arizona could potentially have the following impact:

AZ Annual GDP $277 Billion

X 15% (Rural Portion of AZ GDP)

X .6% (4x Increase in Rural Broadband – 1mb to 4mb)

= **Quarter Billion potential recurring AZ Rural Increase / Year**

2011 McKinsey Global Institute

The Internet Accounts for 21% of all GDP Growth Over the Last 5 Years in Developed Countries WE ARE 21stPER CAPITA IN CAPACITY IN THE WORLD.

Strategy: Accelerate Building Capacitywith LeanGovernment By Harnessing ExistingTaxpayer Owned Assets

Leverage Public Rights-of-way

- Two Highways for (nearly) the cost of one
- Canals
- Power-lines
- Railroads

Recommend Permitting and Easement Best Practices

Leverage Existing $6.3 Million Federal Grant Into Sustainably Funded Mechanism For Acceleration of Digital Capacity Build-out

Provide Long-range State-wide Planning


Highways


Water


Electricity


Hi Capacity Digital Communication Is The New
"Essential Infrastructure"

Digital Arizona Council

Council has Twenty Members

Representation from:

- ADOT
- ADE
- Large Providers
- Small Providers
- Rural & Urban Communities
- Healthcare
- Education
- Rural Economic Development (COGs)
- Business Entities via ATIC and AZTEC

Six Task Groups—67 participants 25 four-hour meetings to date. Detailed input from Providers, ADOT, ADE, ACC Communities, Health Providers/Payers, Economic Developers

Council Task Groups

24meetings 67 participants to date

- Public Policy Recommendations
  - State Broadband Strategic Plan & Map Use
  - Best Policy Practices
    - Implement Independent Rights-of-Way Study Recommendations
    - Tax Policy
    - Sustainable Funding Model
  - Sustainability of Broadband Capacity Growth by private sector
- Rural Community Engagement
  - Demand Aggregation
  - Middle Mile Solutions
  - Provider ROI Enhancement
  - Community TechnicalAssistance

Economic Development via Broadband

Technical Planning Assistance To Communities

Application Demonstrations

eLearning—Distance Learning

eHealth

eCommerce

eGovernment

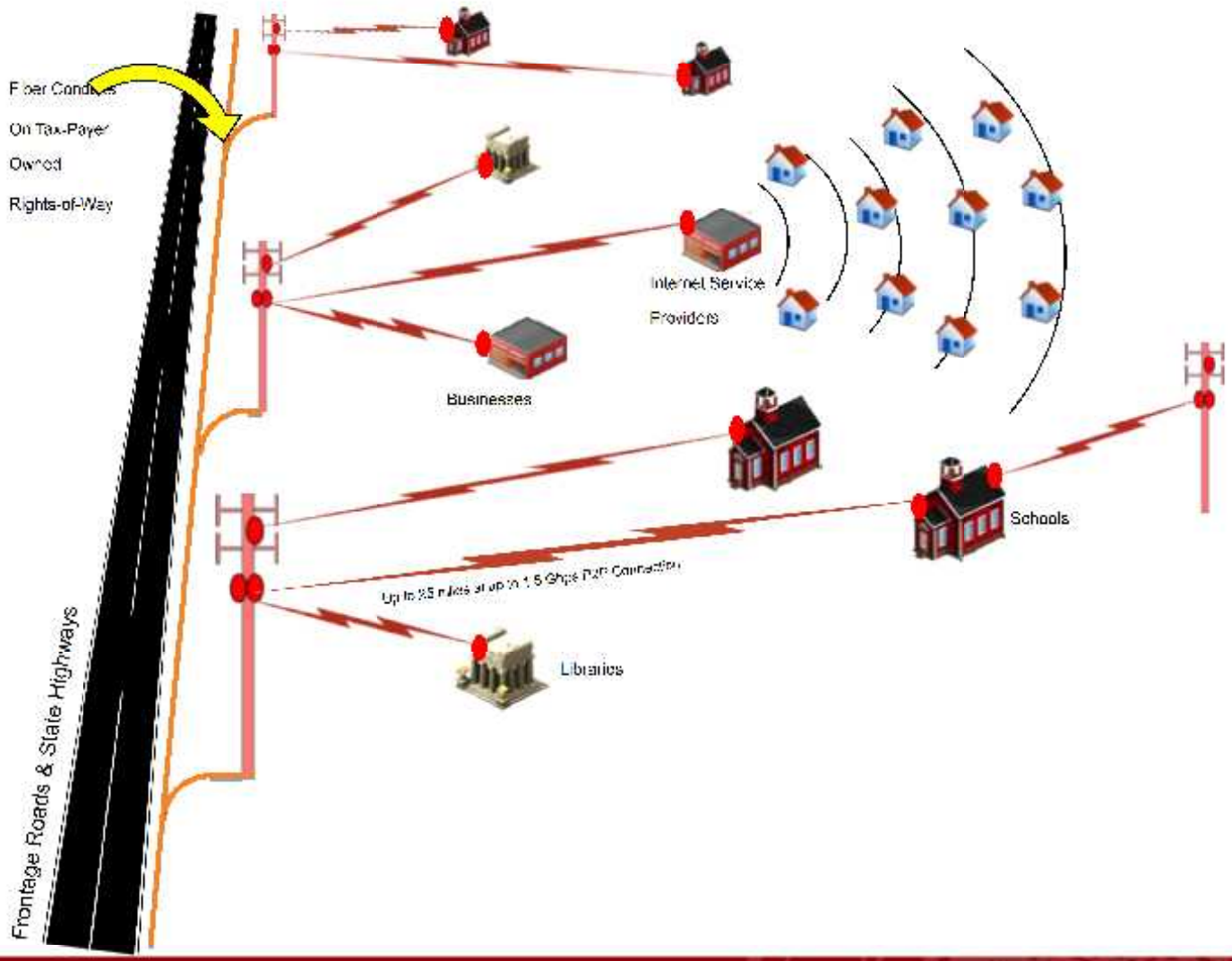
eQuality-of-life

Broadband Application Demonstration Projects are being planned and will justify funding and investment models and strategies

ASET Success Measures

- Non-Metro Broadband Capacity Increased By 20% by 2014 over current baseline
- Non-Metro Broadband Adoption Increased By 20% over current baseline by 2014
- Increased Middle Mile Capacity (Both Gigabits/Sec Per Mile & Actual route miles) Increased by 100% against current baseline by 2015.
- Increasemiles of public rights-of-way re-use by 200% by 2014
- Minimum of 1GbpsTo Every School In Arizona by 2015
- Sustainable FundingModel Establishedby2013

Digital Arizona Tactical Model



Conduit and Low Cost High Capacity Wireless

ASET

5 - 7Year Estimate

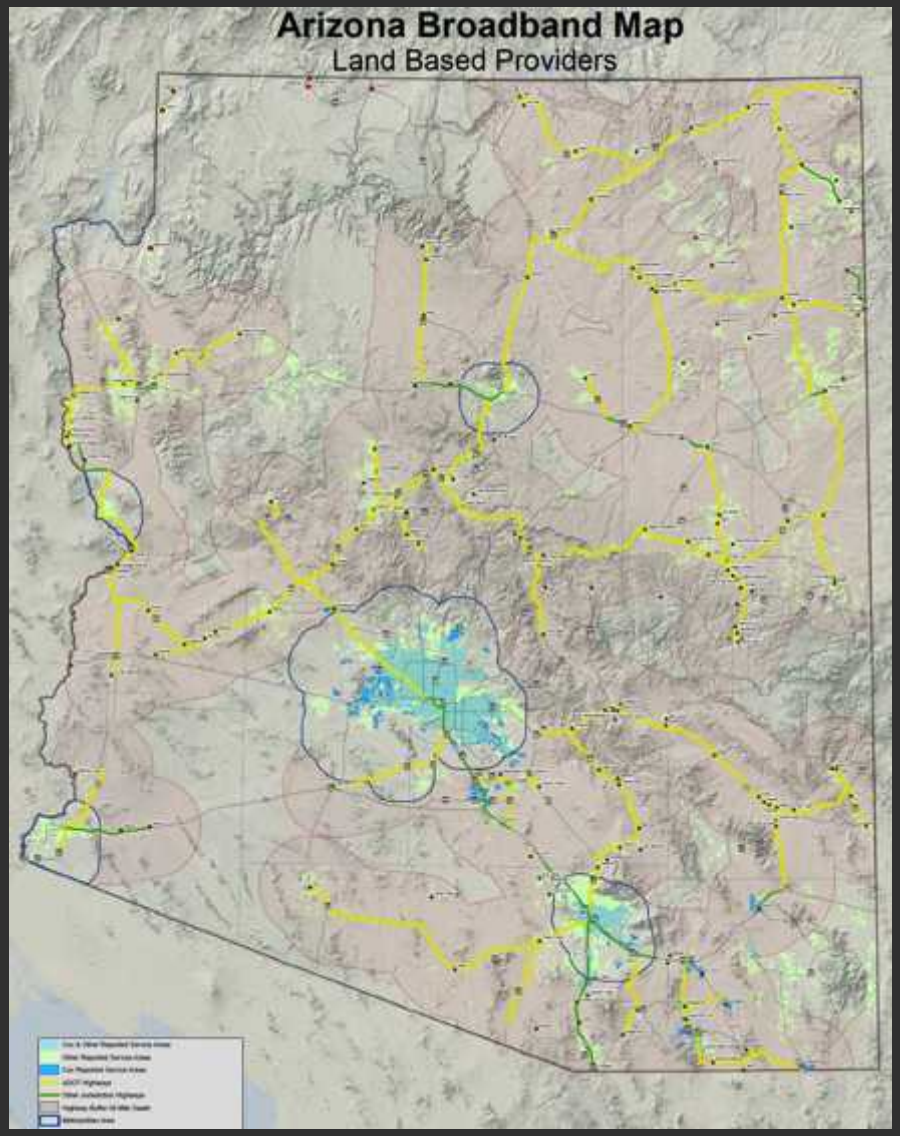
$25K to $50K per rural conduit trench mile

~2500 to 3000 rural trench miles

$20M to $50M per year

Whole State covered in 7 to 10 years

Program can then be“sunset”to maintenance only mode



Conduit trenches have essentially infinite incremental capacity:

(Up to 43PbpsPotential alongany single highway)

(or 21 millionPoint-to-point1.5Gigabit Radio Beams)

Single Cell Tower- Ten 1.5- Gpbs Wireless Beams (15 Gbps) Translates to:

One Hundred and Fifty – 100 megabit simultaneous Internet connections

Six Hundred – 25 megabit simultaneous Internet connections

1800 simultaneous different high-def TV streams

5400 Internet Hi Definition IPTV subscribers

Digital HighwayLAW HadWide Support

Broadens the definition of "transportation" to include the transportation of information

Permits the ADOT Director to consider the construction of trenches with multiple fiber conduits and cell tower sites along rural ADOT managed highways rights-of-way

Multiple empty conduits will be installed in each highway trench made separately available to as many qualified carrier-class providers on a cost-recovery lease basis as desire to use them over time.

Leased access will be non-discriminatory

Funding for conduit construction must come from sources other than existing ADOT funding or the General Fund

ADOT will manage all engineering and physical construction and traffic safety issues around the construction

One conduit will be made available for ADOT "Smart Highway" use

All other conduits will be available only for private sector provider use

Funding

No funding in the Digital Highways Law itself

Some seed funding from existing grants

Leased conduit can be recycled to pay for additional capacity

Provider investment under discussion

State-wide eRate facilitation could provide significant funding from gain sharing

(potential $2-3M / yr

Possible shared funding with Public Safety Broadband (potential $150M over 4-7 yrs)

ASET Website for Maps & All Things Broadband

ASET Broadband Website www.DigitalArizona.gov

Broadband Economic Planning Tool Overview

Questions?

DigitalArizona.gov