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LCOG Broadband Workshops

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Situation

In June 2019 the Lane Council of Governments (LCOG) contracted Info-Tech Research Group to facilitate a series of workshops on the topic of Broadband/Fiber in the areas of Eugene and Springfield.

The goal was to gather input from all relevant stakeholders on their vision of the future of broadband in the area as well as input on how that vision may be achieved

There were six working sessions with varied stakeholders followed by a summary session with core parties.

The Working Sessions:

- Generated a Vision statement and supporting use cases,
- Analyzed the internal and external aids and impediments to success through both a SWOT and PESTLE

The Summary Session:

- Analyse the information gathered by the stakeholders in the working sessions.
- Define logical and achievable path to work towards the gathered visions
- Identify areas where outside help is required to feed into future RFP(s)

Engagement Structure

Repeating Working Sessions

1

Generate Vision

- Gather vision statements from all participants, distilling commonalities and themes to craft a unified vision
- Generate backing use cases that would drive the vision
- Identify supporting structures necessary to achieve the vision

2

Analyze Aids and Impediments

- Generate a tactical view of achieving the vision through a SWOT analysis
- Generate a macro environmental view through a PESTLE analysis

Focused Summary Session

3

Identify Next Steps

- Discuss the gathered results from the working sessions.
- Identify issues or items to be addressed from the output of the working sessions
- Identify directional next steps





Recommendation

Situation

- Lane Council of Governments (LCOG) coordinated working sessions for the purpose of garnering broad area support for, and input into broadband planning in the Eugene-Springfield metro area.
- The groups invited to participate are representative of a broad cross section of public and private institutions in the area

Complication

- There are many asks for this project and not all of them will be (immediately) achievable.
- The funding to execute on future plans in this area has yet to be fully identified.

Recommendation

- Continue to use the output from the working sessions to understand the future vision, asks, and challenges of all participants.
- Identify those asks that are directionally sound and internally achievable and proceed with those as possible.
- Utilize Info-Tech to aid in the creation of an RFP containing those asks that are directionally sound but require outside help.

Generate Vision



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Summary – Generate Vision

The purpose of generating a vision was to:

- Reach consensus within the workshop of a defined target state
- Identify reasons why that state is a necessary end
- Highlight area that support achieving the stated vision

Outcomes

Each workshop session:

- Created a vision for future local broadband
- Created a series of use cases supporting the vision and supporting structures necessary to achieve it

Day 1 - Morning Session

Affinity Diagramming Output

open key network
fiber provide access
public
broadband



Vision

Ubiquitous fiber access on an open neutral network through a planned, supportable rollout.



Use Cases

- Business Connectivity
- Healthcare (TeleHealth)
- Public Services
- Access for Content Creators
- Home Connectivity (Urban / Rural)
- Education
- Future Technology Opportunities



Supporting Structures

- Training, Education and awareness
- Infrastructure Improvement
- Governance Structures
- Inter-Agency/Organization Cooperation

Day 1 – Afternoon Session

Affinity Diagramming Output

equitable
highspeed
throughout
services
fiber
Lane
County
broadband
connectivity
affordable

Vision



Ubiquitous, equitable, highspeed broadband / fiber services available affordably throughout Lane County.

Use Cases



- Economic Development
- Telehealth
- Education and Training
- Public Services
- Future Technology (IOT / 5G)
- Expanding Service

Supporting Structures



- Low Cost
- Governance and Legal
- Funding
- Public Private Partnership

Day 2 – Morning Session

Affinity Diagramming Output



Vision



Ubiquitous availability of reliable, high speed, broadband / fiber access targeting open access, ease of use, and lower cost.

Use Cases



- Economic Development / Jobs
- Education
- 5G / IOT / Future Technology
- Social Connectivity
- Telehealth

Supporting Structures



- Public / Private partnerships
- Legal
- Low cost
- Reliability

Day 2 – Afternoon Session

Affinity Diagramming Output

broadband internet
community access
rural
fiber affordable
cost network home



Vision

Ubiquitous easy to use access to equitable highspeed broadband / fiber provided across a secure, futureproof, open access network supported by regional commitment, coordination and realistic achievable goals.



Use Cases

- Access to Education
- Training
- Telehealth
- Economic Development
- Rural Access
- Connected Home
- Connected Public Spaces
- Services Accessible Online
- Public Safety
- Innovation



Supporting Structures

- Equity / Cost
- Coordination and Planning
- Documentation of Access
- Resourcing
- Security
- Public Private Partnership

Rural Session

Affinity Diagramming Output

open
realistic access
ubiquitous rollout
planned network
neutral

Vision



.

Use Cases



- Education
- Telehealth
- Social Connectivity
- Future Technology (5G / IOT / Smart Cities)
- Economic Development

Supporting Structures



- Coordination and Planning
- Availability of plans on Roadwork
- Documentation of existing access
- Public Private Partnerships

PAN Session

Affinity Diagramming Output



Vision

.



Use Cases

- Enhanced Communications
- Connecting Public Locations
- Connectivity for expanded cloud use
- Public Benefit
- Future Technology (5G / IOT / Smart Cities)
- Economic Development
- Life Safety
- Wireless Connectivity



Supporting Structures

- Resilience
- Scalability
- Regulation
- Reduce Legal Risk
- Central Documentation and visibility to existing resources
- Governance
- Public / Private partnership
- Centralized Management
- Structured SLA
- PAN and inter-agency cooperation

Analyze Aids and Impediments



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Summary

The purpose of analyzing aids and impediments was to:

- Conduct a tactical analysis of the groups ability to achieve the stated vision through a SWOT analysis
- Examine the macro environmental challenges surrounding execution of the vision through the use of a PESTLE analysis

Outcomes

Each workshop session:

- Executed and discussed a SWOT analysis
- Executed and discussed a PESTLE analysis

Exercises used for analysis of the Vision and Use-Cases

SWOT

	Helpful <i>to achieving the objective</i>	Harmful <i>to achieving the objective</i>
Internal origin <i>attributes of the organization</i>	Strengths	Weaknesses
External origin <i>attributes of the environment</i>	Opportunities	Threats

PESTLE

Political	Examine political factors such as taxes, environmental regulations, and zoning restrictions.	Examine economic factors such as interest rates, inflation rate, exchange rates, the financial and stock markets, and the job market.	Economic
Social	Examine social factors such as gender, race, age, income, disabilities, educational attainment, employment status, and religion.	Examine technological factors such as servers, computers, networks, software, database technologies, wireless capabilities, and availability of Software as a Service.	Technological
Legal	Examine legal factors such as trade laws, labor laws, environmental laws, and privacy laws.	Examine environmental factors such as green initiatives, ethical issues, weather patterns, and pollution.	Environmental

Day 1 Morning Session - SWOT Exercise

Strengths	<ul style="list-style-type: none"> • Momentum – Proof of Concept with EUGNet and WIX • SUB / EWEB • Telecom Legacy • Partnerships – Willing to have conversations • Successful collective impact partnerships • Universities could be utilized – strong partner • TAO • EWEB advantages to installation on poles • Forward thinking staff • 170 miles EWEB • WIX • Relatively few players • Regional Planning - LCOG • ISP options / competition • Deliberate efforts to retain YP • Attracting tech firms with highspeed fiber • Public backbone / private service provision (innovation) 	<ul style="list-style-type: none"> • Political trepidation • Lack of vision • Fear of failure • Rent seeking behavior of corporations and incumbent • Lane County size (rural density) • Relative isolation • Loss of institutional knowledge / flexibility • Universities – missed opportunities for leveraging underutilized • Complicated historical collaboration • Losing graduates due to wages and housing • Resiliency / Resistance to change • Aging infrastructure • Network is focused on substations, not buildings / residences 	Weaknesses
Opportunities	<ul style="list-style-type: none"> • Serve underserved communities • Appropriate franchise funds towards telecom construction • Examination of regional technology group • Revenue generation • Public money • Shared issues possible to leverage generational interests • Increased political clout from broadband growth • Educate public on potential • End boundaries for access • Seize opportunities for construction coordination • Create a training system to create personnel • World games (2021) • Provide offset for transportation / law enforcement • IOT for traditional industries creating demand • Engaging younger people in the process • Technologies are matured 	<ul style="list-style-type: none"> • Lack of knowledge about interconnected nature of system • Lack of funding • Decision makers not getting good information • Lack of trained personnel • Needing a business case for expansion • Technology moves much faster than government adapts • Perception of issues lack of access to info (public officials) • Capacity of underlying infrastructure • Misinformation • Creating new monopolies • Desire to offload problems – risk aversion for public officials • Renewal of IRU • Non-competitive pricing • Public ISP 	Threats

Day 1 Morning Session - PESTLE Exercise

Political	<ul style="list-style-type: none"> • Leverage League of Oregon cities to monitor telecom issues • Establish regional coordination monitoring leadership • Political leadership support necessary • Take historical messaging into growth of regional technology messaging • Leverage Metro TV to capture history establish messaging • New city manager / restructuring of departmental organization 	<ul style="list-style-type: none"> • Requires specialized labor to install • Spurs economic multiple (adds value, allows expanded activity) • Up front costs for construction / installation • Foreign trade issues (tariffs) • Demands on fiber and supportive tech • Shift to knowledge base economy • Regional economy • Connectivity as a need for business • Issue of copper theft 	Economic
Social	<ul style="list-style-type: none"> • Use social outreach groups for communication • Reach out to school districts for job training / validation of value of broadband • Leverage LCOG services for community outreach • Capture Lane livability ideas stakeholders • Change conversation from present use to potential use • Outreach to communities of all kinds • Use Universities to expand outreach • Change conversations on broadband as a luxury to broadband as a common good 	<ul style="list-style-type: none"> • 5G expansion • Tech relatively plug and play • People don't want to pay for it • Construction of fiber is complex • Public awareness - desirable • Bottleneck in manufacturing fiber production • Close to future proof • On the job training to run / splice fiber lines • Current tech is sufficient – on the market • Fiber offers a lot of options - asset 	Technological
Legal	<ul style="list-style-type: none"> • Threat of national and state restrictions on public activities • Getting beyond legal silos focused on short term local perspectives 	<ul style="list-style-type: none"> • Fiber is environmentally friendly – one and done • Fiber is not a rare earth mineral - synthetic • Maintenance – copper = high, fiber = lower • Can reduce transportation load • Fiber can be buried • Fiber can piggyback existing infrastructure (ease to put in place) 	Environmental

Day 1 Afternoon Session - SWOT Exercise

Strengths	<ul style="list-style-type: none"> • Regions willingness to come together • Public / Private partnerships • Existing infrastructure (IX, conduit) • Tech hub (knowledge / resources) • Demand from underserved communities • Large anchor customers (i.e. Universities) • Proof of concept completed – proof of viability • Momentum • Awareness of options (metro areas) • Multiple business models under test 	<ul style="list-style-type: none"> • Cost – upfront and recurring • Tech obsolescence • Communication – buy-in and support • Lack of regional plan (localized, not holistic) • Leadership co-ordination and commitment • Time delay • Reliance on external parties (asset debt) 	Weaknesses
Opportunities	<ul style="list-style-type: none"> • Highly educated students from local Universities • Investments in 5G • Expansion in Telehealth technologies • Increase in research innovation dollars • Fiber assets available across various industries • Leverage relationships with key players and industry experts • State wide fiber network • Large events (track and field championships) • Increased demand • Federal dollars available • Legislative advocacy • Expansion of WIX • University research dollars • Lane County Public Utility Services 	<ul style="list-style-type: none"> • No national or state plan for broadband access • Geographic / Economic challenges (large area low density) • Business strategies that focus on profit and long term exclusivity • Lack of coordination among potential service providers • Lack of public awareness of potential uses / benefits of broadband • Lack of base knowledge on broadband by regulators and government officials • Assumption that 5G will suffice as last mile connection • Preference for private sector models to provide cost competitive quality services • Restricted access of high capacity broadband infrastructure within a select few entities • Competition for new infrastructure investments 	Threats

Day 1 Afternoon Session - PESTLE Exercise

Political	<ul style="list-style-type: none"> Elected interest <ul style="list-style-type: none"> Funding and support removal /increase Policy changes Collaboration <ul style="list-style-type: none"> Inter-governmental relations vs degrade / disband Quality of life <ul style="list-style-type: none"> Access / Cost / Equity / Flexibility Basic services available Marketing and business opportunities 	<ul style="list-style-type: none"> Proven economic benefits – momentum and interest are on the rise Technology costs are dropping No current sustainable funding source Cost of labor for installations is expensive There are economic benefits to fiber related end uses (telehealth) Talent attraction quality of life Competition drives costs down 	Economic
Social	<ul style="list-style-type: none"> Broad socio-economic range Differing levels of availability / access Local training of workforce available Rural areas need services but also more funding Young demographic (University) could drive demand 	<ul style="list-style-type: none"> Pricing for EQ going down Accelerated 5G deployments / need for high speed mobile Higher capacity per fiber increases last mile speed GPON / DWDM make expansion faster / cheaper Decreased “cost of entry” for fiber increases competition Remote tech support allows companies to serve larger areas Future technologies demand more bandwidth (IOT/5G/etc.) Micro-trenching drastically reduces install costs Increased storage demands = increased bandwidth demand Oregon is a data center hub (PDX, Hillsboro) Wireless last mile quick to deploy but limited speed 	Technological
Legal	<ul style="list-style-type: none"> Expedited FCC / 5G small cell regulations Patchwork of laws (net neutrality, privacy) Huawei restrictions Anti-trust laws can prevent coordination 	<ul style="list-style-type: none"> Reduced carbon footprint (telecommuting, telepresence) Perceived threat of technology to humans Infrastructure recoverability in a significant natural disaster Unintended consequences Access to resources not before available due to remote locations Options for alternate distribution of population New medium for transportation 	Environmental

Day 2 Morning Session - SWOT Exercise

Strengths	<ul style="list-style-type: none"> • A lot of tech knowledge in the community • Some infrastructure in place (backbone, people) • Public will and desire • Topology is good in the region (wireless) • Timely education to politicians can promote progress • Fiber is perceived as safe • Public agency partnerships for this are strong • Region has good private capital • Proven success to build on • Publicly owned utilities • Fiber successes did not attract resistance • Public private partnerships • WIX and middle mile contracts • Public / private model in proof of concept • Champions with influential government positions • Map of broadband access covering Oregon 	<ul style="list-style-type: none"> • No clear map of all current fiber infra and how to access it • Confusion on how it all works together (regulations, assets) • Telecom tax is confusing and complex, keeps competition down • Lack of clearly articulated pay off for residents • Some public against progress • 5G and other tech advancement – fears / health concerns • Not properly educated the public (whose job is it?) • Lack of solid educational marketing plan • Lack of clear goals • Current activity not future oriented enough • Hard for consumers to figure out who can serve them • Funding gaps • Time to execute / pass regulatory hurdles 	Weaknesses
Opportunities	<ul style="list-style-type: none"> • Faster cheaper internet creates hub • Leverage strength of existing relationships for support • 5G – data heavy networks • Success of investment to data creators opening more investment • Use mature partnerships to build additional funding • Telecom will enhance existing livability of community • Residential connectivity creates demand for greater choice • Help area move towards knowledge based economy • Infrastructure is basic to all areas of economy • Internet of things (IOT) raises demand for connectivity • Opportunities for oversight efficiencies • Promote success by leveraging current network for coming events 	<ul style="list-style-type: none"> • Inconsistent public leadership support for telecom projects • Consistent sustainable financing • Public agency reliance on public opinion combined with public fears of wireless • Difference of approach / model between local government financing and federal regulators • Danger that public investment will not be sustained creating a maintenance / replacement backlog like roads • Cost to bridge backbone to FTTH (Fiber to the home) • Litigation threat by incumbent • Unintended consequences • Complexity and lack of public understanding 	Threats

Day 2 Morning Session - PESTLE Exercise

Political	<ul style="list-style-type: none"> • Leadership towards rewriting telecom act more local government protection • Potential state realignment to advance telecom projects • Coordinated program to manage development • Ongoing issue of acquiring funds • Figure out how to get money for dig once opportunity • Create consistent staffing to stabilize programs • Developing intergovernmental team to support telecom • Eugene allocated funds aligned with telecom development • Every change in leadership a potential risk to support 	<ul style="list-style-type: none"> • Cost of construction to the demarcation point • What is revenue model for fiber supplier (public utility?) • Identify funding sources for initial construction 	Economic
Social	<ul style="list-style-type: none"> • Tailor market messages to target groups (young / old) • Lack of knowledge about value of telecom • Resistance to wireless / 5G technology • Articulate benefits on 3 levels community, family, personal • Education campaign success by transparency and interactivity • Everybody wants internet 	<ul style="list-style-type: none"> • Identify technical build out to get ubiquitous services to the premise • Identify technical build out to align appropriate last mile (fiber, wireless, mix?) • Figure out who owns conduit and fiber 	Technological
Legal	<ul style="list-style-type: none"> • Need to develop more consistency / coherence in planning for “dig once “ • Lack of clarity on current dig once policies • Ongoing need for cities to protect their legal rights • Currently no clear legal impediment to local actions on telecom • Negotiations with Century Link on IRU 	<ul style="list-style-type: none"> • Mitigate damage to soil as trenching occurs • Educate general public about wireless facts • Work to understand potential negative impacts of wireless • Visual impacts are very small 	Environmental

Day 2 Afternoon Session - SWOT Exercise

Strengths	<ul style="list-style-type: none"> • Successful track record of similar proof of concept (EUGNet) • Have a mandate of local officials to make data more open, accessible and available to the public • Solid technical knowledge and understanding • Broadband fiber “tribal knowledge” • More or less in agreement of “the problem” and general direction • Existence of mature efforts (eg. PAN, RFC) • There is some infrastructure in and through the metro area • No internal resistance to change or moving forward • Diversity of group participating in the discussion • Numerous agencies, companies and non-profits all working on similar efforts – potential to converge • Governor’s broadband executive order • Smart city initiatives (Eugene) • Congressional / state delegation pro broadband 	<ul style="list-style-type: none"> • Useful applications have not kept up with popular applications • Incumbents still receiving subsidies • Public complacency • Local culture, community, climate restrictions • Pace of technology change at the edge • Whether demand is sufficient to support the network • Costs, easements, and regulations are ongoing challenges • Self supporting model on public side not well developed • Technological needs vary with application • Variability of political climate • Difficulty of getting common agreement especially regarding funding • The unknown (don’t know what we don’t know) • Insufficient security • Scaling the current architecture 	Weaknesses
Opportunities	<ul style="list-style-type: none"> • Existing unused underground infrastructure • Government entities understand the economic value of fiber and can be champions • More opportunities to collaborate to address the rural divide • Creation of cyber-security programs in schools • Small ISPs collaborate and team up to not overbuild • Part of the national conversation / trend • Most cost effective way of building • Use existing fiber to backhaul to rural communities – public private partnerships • Climate change and keeping people rural • Fiber has a long plant life (better ROI) • Large visibility events need to be served and are funded 	<ul style="list-style-type: none"> • Private public competition • Lack of funding / financial planning • Lack of legal framework to share existing municipal conduit • Political will is weak • Polarization (urban vs rural, public vs business) • Lack of coordination w/ non broadband seeking rural developments (agricultural, climatologists) • Unclear messaging leads to confusion and un realistic expectations • Private sector telecom and incumbents • Insufficient knowledge foresight and understanding of the value of broadband infrastructure • Extreme weather and resulting damage to infrastructure • Unequal population density across Lane County • Public private relationships and difference in culture and goals • Lack of urgency in messaging the need leads to confusion • Lane County topography 	Threats

Day 2 Afternoon Session - PESTLE Exercise

Political	<ul style="list-style-type: none"> • Growing demand for open access and open data – need for greater security • Improving intergovernmental relationships • Broadband is growing in awareness for local and state elected officials • Support for more rural access, but not a lot of will to fund • People want more privacy and sense that they're losing that ability • Expected services have unfunded costs 	<ul style="list-style-type: none"> • Telecom has become an essential service • Wide diversity of economic sectors need telecom • Price of telecom constantly changing • ROI for private ISP create a barrier for rural development • Home business development tied to good telecom • Public sector good at building infra, private good at services • Federal grant programs available for rural areas • Instability of economic climate causes planning problems • Eventual recession could undermine momentum of program • Talent recruitment a problem, education cant keep up • Tech makes possible diversity of employment opportunities 	Economic
Social	<ul style="list-style-type: none"> • Until rural broadband develops, the rural urban divide will remain of grow • Younger generation is developing expectations of instant access • Broadband adoption doesn't break down by age or gender • Equality of access does not address equity issues • Broadband can be an equalizer • Low income families cannot afford access • Diversity of community not always reflected in decisions • Demographic that doesn't feel the need for broadband is aging out 	<ul style="list-style-type: none"> • Examination of external risks of malicious attacks • Tech consumer education (value, safety, etc) • Agreement on network topology deployed across areas • Open access scaling • Future proofing bandwidth • Redundant routes and documentation • Monitoring of traffic for malicious activity? • Right sizing equipment based on cost, use, capacity etc. 	Technological
Legal	<ul style="list-style-type: none"> • FCC regulation changes pre-empting local control and decision making authority • Obligations and implications for infrastructure ownership, risks, uses, fees, access • FCC regulation changes are enabling private investment in small cell and 5G • Grants – burdensome regulation and obligations associated with federal grant conditions • Private public agreements are complex and challenging from a legal perspective 	<ul style="list-style-type: none"> • More equipment means more electricity, lower fiber power draw may compensate • Impact of construction (boring, spoils, etc.) • Environmental benefit of fiber vs copper or wireless –lifespan, RF, etc. • More studies needed on wireless effects • More access to cloud services allowing innovation, remote processing, disaster recovery, etc. • Disaster issues with deployment methodology (ice for overhead, earthquakes for underground, etc. 	Environmental

Rural Focused - SWOT Exercise

Strengths	<ul style="list-style-type: none"> • Consortiums / IRU • Longevity of fiber • Existing private public partnerships • Governor’s office of broadband (cautiously optimistic) • Some regulatory flexibility • There are more entities allowing conduit • Bedroom communities offer higher demand and desire • Multiple providers level of interest • WIX acts as a connection between entities • Electric Co-ops • Solidarity and organization (RFC) • Champions: County – public consortium, City – broadband plans engagement 	<ul style="list-style-type: none"> • Lack of middle mile connectivity • Bottleneck in Eugene - Springfield • Understanding requirements • ODOT should be opportunity – are not cooperative • Large carriers / incumbents • Federal funding does not materialize • Municipal regulations challenging • Open access in conduits is not being addressed (dig once) • Outdated regulations (micro-trenching) • Lack of foresight – playing long game • Leadership change during long time horizon projects • Digital divide • The incumbent’s ability to secure investment / government money 	Weaknesses
Opportunities	<ul style="list-style-type: none"> • Telehealth growing and extending to households • Government bonding may be useful to overcome ROI demands • Political support for overcoming barriers is present and potentially growing • Abandoned areas create openings for small companies • Partnerships with private partners to work with infrastructure development by governments • State restructuring on telecom • Using examples of first served areas to recruit slower areas • Anchor tenants can be used to leverage build out • Public agencies / government to educate citizens on fiber • Public private synergies and priorities 	<ul style="list-style-type: none"> • Access to federal funding for small local entities cumbersome • Challenges with perceived government slowness • Competing priorities take money and attention • 5G won’t happen in rural areas for a decade if ever • Incumbents abandoning copper wherever allowed • Lack of knowledge and misunderstanding about realities of rural rollout • Rural communities falling behind (harder to cross the growing chasm) 	Threats

PAN Focused - SWOT Exercise

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Strengths</p>	<ul style="list-style-type: none"> • Local knowledge of members • Work groups (Info-Tech) • SUB / EWEB Fiber resources tools and training • Gang of Six • Planning for future large plant expansion • ISP partnerships • Current WIX • Future WIX II • LCOG federal grant experiences • PAN members with dark fiber build experience • Proven track record of completing buildouts 	<ul style="list-style-type: none"> • IRU 3rd party use • Current lack of planning • Single path already muxed pairs • Mapping completion • Lack of support for PAN as a whole • Funding • Loss of knowledge due to retiring workforce • SUB / EWEB have differing types of mapping 	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Weaknesses</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Opportunities</p>	<ul style="list-style-type: none"> • Expand customer base to pay for upgrades • Robust nature of PAN • Visibility of successful models • Telecom funds available from Eugene with history of use • Utilities are contributing members of PAN • Existing pathways on some segments of threatened loss • Numerous regional ISPs interested in cooperation • Partnership with other telecom providers • Public interest in improved public connectivity 	<ul style="list-style-type: none"> • Litigious incumbents • Cost of capital for rebuilding the network • Expectation gap between users and providers real capacity • Topography • Unforeseen regulatory restrictions • Lack of coordination between and within agencies • Possibility of failure to renew IRU under similar terms 	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Threats</p>

Identify Next Steps



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Summary

The purpose of the final day of the workshop was to:

- Gather a sampling of the core stakeholders within the working groups (with a strong weighting towards PAN members) to discuss the results of the previous 3 days working sessions.
- Distill a list of issues surrounding a potential broadband / fiber project
- Prioritize issues into next steps and identify those that would be best served with help external to the group

Ultimately, we recommend a three-pronged approach:

- Identify next steps or directionally aligned tasks that can be completed internal to the core group and start execution
- Create and release RFP(s) for the tasks that would require or be aided by external help
- Continue to conduct further research into other communities that have already, or are executing on similar projects.

Identification of Issues

Issues were distilled from the working sessions and validated by the working group.

- Documentation and Knowledge
 - What exists
 - Common map of assets
 - Awareness of all parties
- Areas of Coverage
 - Large area to cover
 - Challenging Topography / Geography
 - Aging / Non-existent Infrastructure
 - Existing Plant Aging (IRU, others)
 - Large areas with little to no coverage (High speed / Fiber)
- Government
 - Political Will
 - Regulations
 - Consistency of "Dig once" ordinances
 - Co-ordination of improvements (ensure all parties aware of when sites open through construction)
- Shared Access to Existing Infra
 - Existing Fiber
 - Existing Conduit
- Funding
 - Cost of Infrastructure
- Project Definition
 - Defined Scope and Responsibility
 - Strategy / Direction / Plan



Prioritization of Next Steps

From the issues, next steps were generated targeted at addressing the issues and moving the project forward.

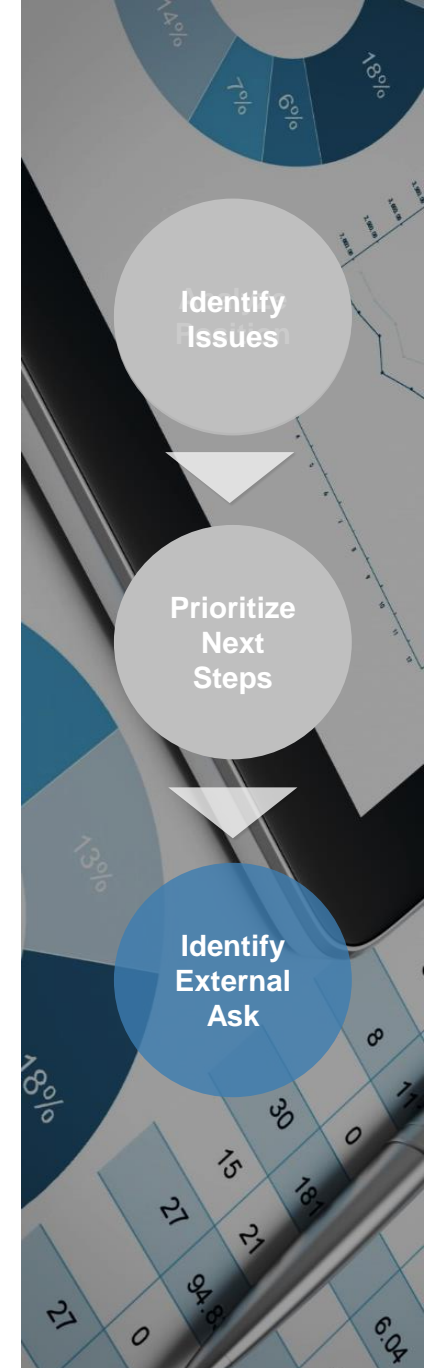
1. Cohesive Comprehensive Vision / Strategy
 - Evolving Future Tech aligned with stakeholder needs
 - Development
 - Proof of concept opportunities
 - Deployment Model
2. Ownership / Governance
 - Possible new entity - current ownership cant scale
 - Ownership of the process
 - Governance of access to assets
3. Education on the issues at and to all levels (Residential / Private / Public / Lobby)
 - Communication plan tailored appropriately
4. Centralized comprehensive documented knowledge of existing infrastructure
 - Capacity and planning
5. Communication and Coordination within and among solution providers (Public and Private)
6. Feasibility - Funding / Cost / Effort
 - Development of funding sources (Grants, Loans, etc.)
7. Regulations and Legal
 - Current assets have regulatory baggage
 - Similar "Broadband Friendly" policy across regions



Identification of Areas for External Ask

Taking the list of next steps the working group discussed which would be aided best through outside help. These tasks will be contained in the RFP ask.

1. **Cohesive Comprehensive Vision / Strategy**
 - Evolving Future Tech aligned with stakeholder needs
 - Development
 - Proof of concept opportunities
 - Deployment Model
2. Ownership / **Governance**
 - Possible new entity - current ownership cant scale
 - Ownership of the process
 - Governance of access to assets
3. Education on the issues at and to all levels (Residential / Private / Public / Lobby)
 - **Communication plan tailored appropriately**
4. Centralized comprehensive documented knowledge of existing infrastructure
 - Capacity and planning
5. Communication and Coordination within and among solution providers (Public and Private)
6. **Feasibility - Funding / Cost / Effort**
 - Development of funding sources (Grants, Loans, etc.)
7. Regulations and Legal
 - Current assets have regulatory baggage
 - Similar "Broadband Friendly" policy across regions



Successful and continued forward momentum will be aided by learning from others

Links to further research:

[Chatham County Fiber Feasibility Study](#)

[Fiber Broadband Association](#)

[Community Networks](#)

- [Municipal FTTH Networks Map](#)

[Vice](#)

- [Vice - Municipal Broadband](#)
- [Vice - Community Broadband](#)
- [Report : 26 States Now Ban or Restrict Community Broadband](#)
- [More than 750 American Communities Built thier own Internet Networks](#)

