



Telecommunications Advisory Board (TAB) Notebook

Revised April 2024

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Purpose and Members

Purpose

The purpose of the Telecommunications Advisory Board (TAB) is to assist the Pitkin County Board of Commissioners (BOCC) in the implementation of the Translator Fund and to advise the BOCC on expenditures, administration, and operations of an economical system for re-broadcasting of television and FM radio signals, and for extending wireless communication and internet services for the citizens of Pitkin County.

Members

Regular membership is open to Pitkin County Residents with Alternate membership open to residents of the mid-Roaring Fork Valley. A Pitkin County staff liaison can be reached through the Translator main service lines at 970-920-5395 or at translator@pitkincounty.com.

Authority: This is an advisory board only.

Membership	Appointed	Term Expires
John Emerick, Chair Representing Redstone/Upper Crystal	February 2007	April 1, 2027
Kevin Heinecken Representing Snowmass	July 2013	April 1, 2024
Joel Rittvo Representing Swiss Village	July 2016	April 1, 2024
Buck Field Alternate representing Aspen	July 2016	April 1, 2025
Robert Plessett Representing Aspen	April 2021	April 1, 2025
Alex Kelloff Representing Aspen	February 2023	April 1, 2027
Vacant - Alternate		

Telecommunications Technologies

What is a Translator?

A translator is the FCC's term for a low-power radio frequency broadcast station that complements the primary local broadcast service. This service was first to allow FM (since 1970) and TV (since 1982) stations to provide supplementary service to areas in which direct reception of such services is unsatisfactory due to distance or intervening terrain barriers (for example, a mountain). Translators operate on a different frequency from the broadcast station they relay.

For example, an FM station on 105.1 in Aspen might not have good coverage in Redstone because high mountains in between block the signal. If the FCC allows, the station might be able to use a translator on 93.7 (as an example) located near Redstone, to improve their signal there. It's basically a low power radio station that carries the same programming as the main station on a different frequency.

Translators are more common in the mountainous west and other locations with terrain barriers. Many are owned by the stations they relay; some are owned by private individuals, the communities they serve, or governments. Among its numerous mountaintop telecommunications sites, Pitkin County owns licenses to 42 LPTV translator licenses (6 per site across 7 sites) and 37 FM translator licenses.

What is Broadband?

Broadband is the FCC's term for high-speed internet access. From 2015, this was defined as download speeds of least 25 megabits per second (or Mbps) and upload speeds of at least 3 Mbps. As of March 2024, the FCC's new definition includes download speeds of least 100 Mbps and upload speeds of at least 20 Mbps.

Broadband can be provided over different platforms, including Digital Subscriber Line (DSL), Cable Modem, Fiber, Wireless, and Satellite. Due to the local topography, many homes in Pitkin County are unreachable by wired services and rely on wireless technologies to connect to the internet. Many of these homes utilize fixed-wireless services provided from nearby mountaintop telecommunications sites, or satellite technologies, however some are still without a reliable broadband connection. Pitkin County is working to expand fixed-wireless services from its mountaintop telecommunications site through the Pitkin County Broadband Initiative, as well as working with other local governments and entities to expand fiber connectivity throughout the Roaring Fork Valley.

TAB Role, Summarized

The Telecommunications Advisory Board plays a critical role as a public interface and forum for telecommunications issues facing Pitkin County. TAB member's insight, private connections to the public, and local knowledge are a valuable and needed contribution to the effective and focused management and expansion of TV, FM, and broadband services throughout the Roaring Fork Valley and surrounding drainages. TAB members are highly encouraged to provide feedback and advice on opportunities for growth and areas of improvement, as well as short and long-term vision for Pitkin County's telecommunications and initiatives.

Broadcast technologies are an effective means of dispersing digital content across large areas. FM radio continues to be one such valuable and reliable source of information for many people. Pitkin County has limited capability to actively monitor reception quality from a listener's perspective. TAB members are encouraged to provide feedback on translator operations in both quality, as well as content, and to make recommendations for improvements or changes. Non-withstanding existing agreements by the BOCC, the determinations for allocation and rebroadcast of radio stations on County-owned translators throughout the Roaring Fork Valley is requested as a responsibility of the TAB. Today, Pitkin County's FM translators still broadcast a classic analog signal (as do the vast majority of local FM stations) but modern technologies such as Hybridized Digital (HD Radio) may offer opportunities for new content. Over the air television service also serves as a valuable resource for many local residents and a growing number of "cable-cutters". New technologies, such as NextGenTV, are emerging with new opportunities for digital content delivery and improved video and audio quality. TAB members are also highly encouraged to investigate translator opportunities and technologies and report on opportunities for improvement, growth, and partnership across the TV and FM translator network to meet both the needs and the taste of the local public.

Point to point technologies (such as internet services) face both similar and different challenges from broadcasts. Broadband technology in particular is a fast-paced industry and prone to rapid change and disruptive technologies. Accordingly, capital and operational costs for broadband deployment and expansion can be very high and are highly reliant upon additional funding through private and public sources including grants from both local, state, and federal levels. Furthermore, deployment strategies and targets may be dynamic. Local insight on modern needs of residents and businesses, research on new technologies or opportunities, and recommendations from TAB members aids in the strategic direction and effective application of Pitkin County's efforts to improve local point to point connectivity. TAB members are also highly

encouraged to explore and report on any opportunities for financing or partnership that may be available to Pitkin County.

The TAB has a unique opportunity as the public representatives for telecommunications in the valley to present their findings, concerns, insight, and recommendations as a non-biased source to the Pitkin County Board of County Commissioners. As such, TAB members are asked to be advocates for the support and improvement of telecommunications services in the Roaring Fork Valley.

**BY-LAWS OF THE PITKIN COUNTY
TRANSLATOR ADVISORY BOARD**

*Amended July 27, 2011 by BOCC Resolution # 069-2011
Amended April 11, 2012 by BOCC Resolution # 039-2012
Amended June 12, 2013 by BOCC Resolution # 037-2013
Amended March 25, 2015 via BOCC Resolution # 016-2015
Amended March 8, 2019 via BOCC Resolution #011-2019*

ARTICLE I

Name

Section 1. **Name.** The name of this citizen board shall be Pitkin County Telecommunications Advisory Board (the “Board”).

ARTICLE II

Purpose and Policy

Section 1. **Purpose.** The purpose of the Board is to assist the Pitkin County Board of Commissioners (the “BOCC”) in the implementation of the Translator Fund Program, as authorized by the Pitkin County voters, and to advise the BOCC on the expenditures, administration, and operations of an economical system for re-broadcasting of television and radio signals and for extending wireless communication and internet services for the citizens of Pitkin County.

Section 2. **Policy.** The policy of the Board is to further the goals of the Translator Fund as set out in ballot the 1995 Referendum #1A and 2011 Referendum #1B Coordinated Election.

Section 3. **Additional Policies.** The BOCC may from time to time adopt priorities for the implementation of the voter-authorized program goals. Such policies will be adopted by Board resolution and shall remain in effect for no longer than five years unless readopted by a subsequent resolution.

ARTICLE III

Responsibilities

Section 1. **Functions.**

- (1) Make recommendations to the BOCC regarding expenditures and management of the Translator Fund.
- (2) Review proposals and opportunities presented to the Board and advise the BOCC on the merits to such proposals and opportunities.
- (3) Make recommendations to the BOCC and county staff regarding the management and operation of the translator system.

- (4) Formulate and make recommendations to the BOCC on policies regarding areas served by the translator system and signals re-broadcast to those areas. These policies shall include, but not be limited to selection of television and radio stations on the translator system and the administration of Public Service Announcements.
- (5) Perform analysis of existing methods and recommend plans to implement new or better methods of providing television and radio signals to the citizens of Pitkin County.
- (6) Research and facilitate the extension of wireless communication and internet services within Pitkin County through the Translator system.
- (7) Analyze existing funding mechanisms and recommend new methods of funding the services provided.

ARTICLE IV Membership

- Section 1.** **Appointments.** Appointments to the Board shall be made by the Board of County Commissioners. There shall be a maximum of five members and an additional two alternate members on the Board.
- Section 2.** **Term.** Each member shall be appointed to serve a four (4) year term staggered so that not all terms expire at the same time in order to preserve continuity within the Board.
- Section 3.** **Qualifications.** Five (5) members of the Board shall be residents of Pitkin County. Of these five members, one member shall be appointed from each of the five Pitkin County commissioner districts, if possible. The two (2) remaining alternate members may be residents of the Roaring Fork Valley (Highway 133 to Aspen as described on Attachment A). The Chair and Vice Chair must be residents of Pitkin County. A Board member shall hold no office or appointment in any county or municipality, nor be employed by any county or municipality during the term of the appointment. A Board member shall not be employed by or have any financial gain, with any radio or television station, or cellular or broadband provider during the term of the appointment. However, a Board member may sit on a community volunteer board for a non-profit in such business during their appointment.
- Section 4.** **Compensation.** Board members shall serve without pay.
- Section 5.** **Removal.** A Board member may be removed from the Board for good cause only, by a vote of the BOCC after a recommendation concerning removal is made by the Board. The Chair shall request the BOCC remove a member of the Board who has two unexcused absences from regular meetings within one calendar year. Good cause for removal shall include no longer residing in Pitkin County and/or the mid-Roaring Fork Valley, or for a violation of the conflict-of-interest policy contained within these Bylaws.

Section 6. **Membership.** Should an appointed Board Member's residency change during his/her term, but the Board Member remains a resident of the mid-Roaring Fork Valley as described in Article IV, Section 3, such member may continue to serve his/her term as originally appointed and may be reappointed for subsequent terms at the discretion of the BOCC.

ARTICLE V Officers

Section 1. **Officers.** The officers of the Board shall be a Chair and a Vice Chair. The Chair and Vice Chair shall be selected by the members of the Board but shall be limited to those Board members who are Pitkin County residents.

Section 2. **Elections and Term of Office.** The Chair and Vice Chair shall be appointed by the Board at the regular meeting following June 1. Subject to early termination, each officer shall hold office for up to two years and until a successor has been appointed. The Chair and the Vice Chair shall serve at the pleasure of the Board.

Section 3. **Vacancies.** Should the office of Chair or Vice Chair become vacant, the Board shall appoint a successor at its next regular or special meeting. Such appointment shall be for the unexpired portion of the previous term.

Section 4. **Duties.**

- (1) **Chair.** The Chair shall preside at all meetings of the Board and shall perform all duties usually incident to the office of Chair and such other duties as may be assigned from time to time by the Board. The Chair shall execute and acknowledge, in the name of the Board, all recommendations and communications authorized by the Board. The Chair shall see to the execution of resolutions and adoption of minutes of the meetings of the Board.
- (2) **Vice Chair.** In the absence of the Chair, the Vice Chair shall have all powers recognized to the Chair. The Vice Chair shall perform such other duties as shall from time to time be assigned by the Board.

ARTICLE VI Meetings

Section 1. **Regular Meetings.** Meetings shall be held on a bi-monthly basis, or as needed. The specific day for the conduct of Board meetings shall be determined by the Board in advance of the upcoming year. A schedule of regular meetings shall be made available through customary County procedure.

Section 2. **Special Meetings.** A special meeting may be called at any time by the Chair or by written request of two (2) members of the Board. All special meetings must comply with notice requirements of the Colorado Open Meetings Law.

- Section 3. Order of Business.** At regular meetings of the Board the following shall be the recommended order of business:
1. Roll call
 2. Reading and approval of minutes of last meeting
 3. Changes to the Agenda
 4. Public Comment
 5. Staff report
 6. Old business
 7. New business
 8. Executive session discussion
 9. Adjournment
- Section 4. Voting.** Voting shall be either by voice or roll call vote. Any action requiring a vote shall be decided by a simple majority, except a recommendation forwarded to the BOCC shall be made by a majority of the entire membership of the Board.
- Section 5. Quorum.** A quorum of the Board shall be constituted by the personal attendance of three of the five Pitkin County resident members of the Board. Once a quorum is made, it cannot be broken until the meeting is adjourned.
- Section 6. Parliamentary Procedure.** The rules contained in Robert’s Rules of Order shall govern the Board in all cases to which they are applicable and in which they are not inconsistent with these Bylaws and the Home Rule Charter.
- Section 7. Agenda.** The agenda shall be prepared by the Chair and assigned County staff with copies to be distributed in advance of each regular or special meeting.
- Section 8. Public Access.** All meetings of the Board shall be open to the public, except executive session as authorized in the Colorado Open Meetings law, C.R.S. § 24-6-402, et seq.

**ARTICLE VII
Conflict of Interest**

- Section 1. Policy.**
- A. In order to ensure the impartiality and integrity of their local government decision makers, as provided in section 8.6.1 of the County Charter, the people of Pitkin County intend to prohibit County policy-makers from participating in matters in which they have a conflict of interest. This prohibition applies to County policy-makers serving their elected or appointed terms and those who have concluded their terms of office.
 - B. A conflict of interest is a disparity between the private interest and the official responsibilities of an individual in a position of trust in government. This code is intended to prevent conflicts of interest without obstructing fair and speedy resolution of issues that come before the County.

Section 2. Prohibition on Conduct.

- A. No Board member shall vote or otherwise participate in a decision making process which affects any entity or property interest in which he/she has a financial interest or which any member of his/her family has a financial interest. Family is defined as spouse, parent, brother, sister, grandparent, child, grandchild, step-child, step-parent, step-grandparent, mother-in-law, father-in-law, brother-in-law, sister-in-law, son-in-law, daughter-in-law, or any individual who is a part of the County policy maker's immediate household. A Board member otherwise barred from participating in a discussion pursuant to this section, may, if requested by the BOCC, give information about the issue or transaction in which he/she has a financial interest.

- B. If an issue arises in which a Board Member believes he/she may have a conflict of interest, he/she must divulge that potential conflict of interest to the County Attorney for an opinion on the validity of the conflict, and inform the Board. If determined to be in conflict regarding the issue before him/her, he/she will refrain from participation in discussion or vote on that issue.

- C. Failure to comply with the terms of this section may be deemed adequate cause for removal under Article IV Section 5.

**ARTICLE VIII
Amendment**

Section 1. Amendment. These By-Laws shall be the province of the BOCC and shall be adopted and amended only by formal resolution of the BOCC.

POLICY TYPE: Governance

**POLICY TITLE:
Standard of Conduct**

POLICY 2.11

**STANDARD OF CONDUCT
FOR PITKIN COUNTY PUBLIC OFFICIALS**

**ADOPTED BY ORDINANCE 28-02
AMENDED BY ORDINANCE 002-2005
AMENDED BY ORDINANCE 044-2005**

Applicability - The standards contained herein apply to the following:

- A. Board Members, which include:
 - 1. Members elected to the Board of County Commissioners
 - 2. Members appointed to Volunteer Citizen Boards by the Board of County Commissioners
- B. Section Leaders appointed by the County Manager
- C. The County Manager, the Open Space and Trails Director, and the County Attorney
- D. County Hearing Officers

The term “Public Officials,” when used in this document, refers to Section Leaders appointed by the County Manager, Board Members, the County Manager, the Open Space and Trails Director, the County Attorney, and County Hearing Officers.

Preamble

The citizens of Pitkin County are entitled to fair, ethical and accountable local government that earns the public’s confidence in the integrity of Public Officials. In keeping with Pitkin County’s commitment to the public trust, the effective functioning of democratic government therefore requires that:

- Public Officials respect the laws and policies affecting the operations of government;
- Public Officials be independent, impartial and fair in their judgment and actions;
- Public office be used for the public good, not for personal gain; and
- Public deliberations and processes be conducted openly, unless legally confidential, in an atmosphere of respect and civility.

The primary responsibility of the members of the Board of County Commissioners is to establish the overall policies for the County and to exercise the powers, duties, and functions of the County in compliance with applicable law and the Home Rule Charter, through action at regular and special meetings and other job-related duties and functions.

The primary responsibility of the members of the various Citizen Boards is to exercise the duties and responsibilities vested in each board through formal action of that Citizen Board at regular and special meetings.

The primary responsibility of County Section Leaders is to develop, communicate, and implement organizational policies, to recommend public and budgetary policies to the Board of County Commissioners and to implement policies of the Board of County Commissioners.

The primary responsibility of County Hearing Officers is to provide contract services to the County to conduct judicial or quasi-judicial proceedings on various County matters.

All Public Officials must understand, respect, and value the job, the organization, the employees, the citizens, and the common public interest.

To this end, the Pitkin County Board of County Commissioners has adopted a Standard of Conduct for Public Officials to assure public confidence in the integrity of local government and its effective and fair operation.

1. Act in the Public Interest

Recognizing that stewardship of the public interest must be their primary concern, Public Officials will work for the common good of all the people of Pitkin County, and will assure fair and equal treatment of all persons, claims and transactions coming before Pitkin County Boards.

2. Conduct of Public Officials

The professional conduct of Public Officials must be of the highest standard. Public Officials shall be dedicated to the highest ideals of honor and integrity in order to merit the respect and confidence of the public.

Public Officials shall comply with the laws of the United States, the State of Colorado and Pitkin County in the performance of their public duties. These laws include, but are not limited to: The United States and Colorado constitutions; the Pitkin County Home Rule Charter; laws pertaining to conflicts of interest, election campaigns, financial disclosures, employer responsibilities, open processes of government; and County ordinances and policies.

3. Respect for Process

Public Officials shall perform their duties in accordance with the processes and rules of order established by the County Commissioners governing the deliberation of public policy issues,

with meaningful involvement of the public, and through implementation of policy decisions of the Board of County Commissioners by staff.

4. Conduct of Public Meetings

Public Officials shall prepare themselves for public issues, listen courteously and attentively to all public discussions before the body, and focus on the business at hand. Public Officials shall base their decisions on the merits and substance of the matter before them.

5. Communication

Public Officials shall publicly endeavor to share all relevant information regarding a matter under consideration that they may have received from sources outside the public decision-making process. Board Members and County Hearing Officers involved in quasi-judicial land use decisions or other judicial or quasi-judicial decisions shall disclose any such communications at the public hearing or public meeting. After an application has been submitted to the County, Board Members and County Hearing Officers shall not intentionally engage in communications with interested parties regarding issues upon which they must make a judicial or quasi-judicial decision at a public meeting or public hearing. Judicial or quasi-judicial decisions are those for which there is a specific applicant (or appellant) requesting a decision from the Board Members or Hearing Officer, based upon specific facts to be considered at the hearing or meeting and made a part of the record.

6. Conflict of Interest

Conflicts of interest can occur both from private interests and from institutional interests.

A. Private Conflicts of Interest: The following public officials are subject to the conflict of interest provisions in the Pitkin County Home Rule Charter: County Commissioners, County Manager, Assistant County Manager, Community Development Director, County Attorneys and the Open Space and Trails Director.

For other Section Leaders not subject to the Home Rule Charter provisions and for Volunteer Citizen Board members and County Hearing Officers the following conflict of interest policy shall apply.

A conflict of interest is a disparity between the private interest and the official responsibilities of an individual in a position of trust in government. This policy is intended to prevent conflicts of interest without obstructing fair and speedy resolution of issues that come before the County.

No Section Leader, Citizen Board Member, or County Hearing Officer shall vote or otherwise participate in a decision making process which affects any property, asset, or entity in which he/she has a known significant financial interest or in which any member of his/her family has a known significant financial interest. Family is defined as spouse, parent, brother, sister, grandparent, child, grandchild, step-child, step-parent, step-grandparent, mother-in-law, father-in-law, brother-in-law, sister-in-law, son-in-law, daughter-in-law, or any individual who is a part of the Section Leader's,

Citizen Board Member's, or County Hearing Officer's immediate household. Any Section Leader or Citizen Board Member otherwise barred from participating in a discussion pursuant to this section may, if requested by his/her respective Board or the County Manager, give information about the issue in which he/she or his/her family has a financial interest. A County Hearing Officer may not hear a matter in which he/she or his/her family has a financial interest.

This prohibition, and the prohibition on institutional conflicts in paragraph 6B, shall not prevent Section Leaders from performing their work for the County, so long as any financial or *institutional* interest held by a Section Leader is not in conflict with the common public interest, and is disclosed to the County Manager or, in the case of the County Manager, to the Board of County Commissioners. The County Manager has the discretion to direct a Section Leader to refrain from participation when a conflict exists.

If an issue arises in which a Volunteer Board Member believes he/she may have a either a private or an institutional conflict of interest, he/she must disclose that potential conflict of interest to his/her respective board and the County Attorney for an opinion on the validity of the conflict. If determined to be in conflict regarding the issue before him/her, he/she will refrain from participation as a Board Member in the decision-making process or voting on that issue. A Board Member may vote on an issue notwithstanding the conflict only if his/her participation is necessary to obtain a quorum or otherwise enable the board to act.

If an issue arises in which a Section Leader believes he/she may have a conflict of interest, he/she must disclose that potential conflict of interest to the County Manager for an opinion on the validity of the conflict. If determined to be in conflict regarding the issue before him/her, he/she will refrain from participation in the decision-making process or voting on that issue.

If an issue arises in which a County Hearing Officer believes he/she may have a conflict of interest, he/she must disclose that potential conflict of interest to the County Attorney for an opinion on the validity of the conflict. If determined to be in conflict regarding the issue before him/her, he/she will be disqualified from acting as Hearing Officer on that matter.

B. Institutional Conflicts of Interest. An institutional conflict of interest occurs when a Public Official is a member of a board, group, or organization that is requesting action from the Public Official or the Board of County Commissioners of Pitkin County or volunteer citizen board of which the Public Official is a member, and the action requested provides a benefit to the board, group, or organization that is different from the common public interest. No Public Official shall vote or otherwise participate in a decision making process requested by a board, group, or organization of which he or she is a member when an institutional conflict of interest exists.

The process for handling these institutional conflicts are the same as expressed in this Standard of Conduct for handling private conflicts. Institutional conflicts of those Public Officials subject to the Home Rule Charter provisions on conflicts are governed by the Home Rule Charter process.

7. Gifts and Favors

Public Officials shall not take any special advantage of services or opportunities for personal gain, by virtue of their public office. They shall refrain from accepting any gifts, favors or promises of future benefits which might compromise their independence of judgment or action or give the appearance of being compromised. Acceptance of nominal gifts in keeping with special occasions, meals and refreshments in the ordinary course of business, or social courtesies, which promote good public relations and encourage participation in community events, is permitted.

8. Confidential Information

Public officials have a duty and obligation to promote what should be public and a duty and obligation to protect what should be confidential. Public Officials shall respect that certain information concerning the property, personnel or affairs of the County is confidential. They shall neither disclose confidential information, nor use such information to advance their personal, financial or other private interests without prior authorization from their respective boards.

9. Use of Public Resources

Public Officials shall not use public resources not available to the public in general, such as County staff time, equipment, supplies or facilities, for personal gain.

10. Representation of Private Interests

In keeping with their role as stewards of the public interest, Board Members shall not appear before their own boards or before the Commissioners on behalf of the private interests of third parties on matters related to the areas of service of their boards.

11. Advocacy

Board Members shall represent the official policies or positions of their Board to the best of their ability when designated as delegates for this purpose. When presenting their individual opinions and positions, Board members shall explicitly state they do not represent their body or Pitkin County, nor will they allow the inference that they do.

12. Policy Role of Public Officials

Public Officials shall respect and adhere to the Board-Manager structure of Pitkin County government as outlined by the Home Rule Charter. In this structure, the Board of County Commissioners determines the policies of the County with the advice, information and analysis provided by the public, boards and commissions, and County staff.

13. Independence of Boards and Hearing Officers

Because of the value of the independent advice of Volunteer Citizen Boards and County Hearing Officers to the public decision-making process, members of Board of County Commissioners

shall refrain from using their position to unduly influence the deliberations or outcomes of appointed board or hearing officer proceedings.

14. Positive Work Place Environment

Public Officials shall support a positive and constructive work place environment for County employees and for citizens and businesses dealing with the County. Any single Board Member should not give direction to staff, but after a decision of the majority of the Board present at a meeting, the request can then be forwarded to the County Manager, or to the applicable staff liaison for Citizen Boards, to give staff direction. However, individual board members may seek information directly from staff, which will then be distributed to all board members. If a Board Member has a request that is of a magnitude that disrupts the normal workflow of a County employee, the request shall go through the County Manager. This section shall not be construed to prohibit the County Manager or staff liaisons from obtaining direction from Board Members in emergency situations when a meeting cannot be held before some action is necessary.

15. Bylaws

All Volunteer Citizen Boards shall adopt bylaws. These bylaws must be approved by resolution of the Board of County Commissioners.

16. Absenteeism

Members of the Board of County Commissioners shall make every effort to attend all scheduled meetings. If they are unable to attend any meeting they shall advise the County Manager.

Each Volunteer Citizen Board shall recommend its own absenteeism policy and include this policy in its bylaws. All Citizen Board members shall comply with their respective Board's absenteeism policy.

17. Implementation

The Pitkin County Standard of Conduct is intended to be self-enforcing and shall be included in the regular orientations for new board members, and newly elected and appointed officials and Section Leaders. In addition, the Standard of Conduct shall be reviewed by the Board of County Commissioners to consider recommendations and to update it as necessary.

18. Compliance and Enforcement

The Pitkin County Standard of Conduct expresses standards of ethical conduct expected for members of the Pitkin County Commissioners, Volunteer Citizen Boards and Section Leaders. Public Officials themselves have the primary responsibility to assure that ethical standards are understood and met, and that the public can continue to have full confidence in the integrity and effective functioning of government.

Any Board Member may notify the Board of County Commissioners, through the County Attorney, when actions that appear to be in violation of the Standard of Conduct are brought to their attention. The County Attorney shall bring any alleged violation to the full Board of County Commissioners. The Board of County Commissioners may impose sanctions, up to and including removal of members of Volunteer Citizen Boards and County Hearing Officers, for violation of this Standard of Conduct.

The Board of County Commissioners may impose sanctions on Commissioners whose conduct does not comply with the County's ethical standards, such as reprimand, public or private censure, loss of seniority or committee assignment, or budget restriction. The imposition of sanctions on any Board Member requires the unanimous approval of the full Board of County commissioners, except for any Commissioner who is the subject of the proposed sanction.

Unless prohibited by law, deliberations and consideration of sanctions, if any, shall be conducted at a public meeting.

County staff subject to this Standard of Conduct may be subject to disciplinary action by his/her supervisor, up to and including termination of employment for violation of this Standard of Conduct.

Except as provided in the Home Rule Charter, a violation of this Standard of Conduct shall not be considered a basis for challenging the validity of a County Commissioner, Volunteer Citizen Board, or County Hearing Officer decision, and shall not create any legal rights for a private citizen.

This section on sanctions does not supersede the provisions of the Home Rule Charter, and in the event of any conflicts between this Standard of Conduct and the Home Rule Charter, the Home Rule Charter prevails.

Ballot Initiatives

Official Abstract of Votes Cast at a *Coordinated* Election held in
Preliminary - Official
Pitkin County, Colorado, on Tuesday, the *7th* day of *November* 19 *95*

REFERENDUM 1A

FM RADIO AND TELEVISION TRANSLATOR PROPERTY TAX

SHALL PITKIN COUNTY TAXES BE INCREASED UP TO \$115,000 ANNUALLY BY THE IMPOSITION OF AN ADDITIONAL PROPERTY TAX LEVY OF UP TO 0.091 MILLS, FOR A TOTAL OF UP TO 0.374 MILLS, COMMENCING WITH THE 1996 COLLECTION YEAR, AND THEREAFTER, FOR THE SOLE PURPOSE OF FUNDING ALL COSTS RELATED TO THE CONTINUANCE OF THE PITKIN COUNTY FM RADIO AND TELEVISION TRANSLATOR SYSTEM; AND SHALL PITKIN COUNTY BE ENTITLED TO RECEIVE, COLLECT, AND SPEND THE FULL REVENUES FROM SUCH TAX INCREASE REGARDLESS OF WHETHER THE ANNUAL REVENUES FROM SUCH TAX INCREASE IN ANY YEAR AFTER THE FIRST FULL YEAR IN WHICH IT IS IN EFFECT EXCEED THE ESTIMATED DOLLAR AMOUNT STATED ABOVE?

2011 Pitkin County Ballot Referendum 1B

Expanding the Purpose of the Pitkin County FM & TV Translator Property Tax

Without increasing taxes, shall the purpose of the existing FM radio and TV translator property tax be expanded to include researching and facilitating the extension of wireless communication and internet services within Pitkin County, if and when the technology is available and affordable, as well as continuing to fund all costs related to the FM radio and TV translator system?

Result:

YES	2,499	60%
NO	1,633	40%

2015 Pitkin County Ballot Question 1A

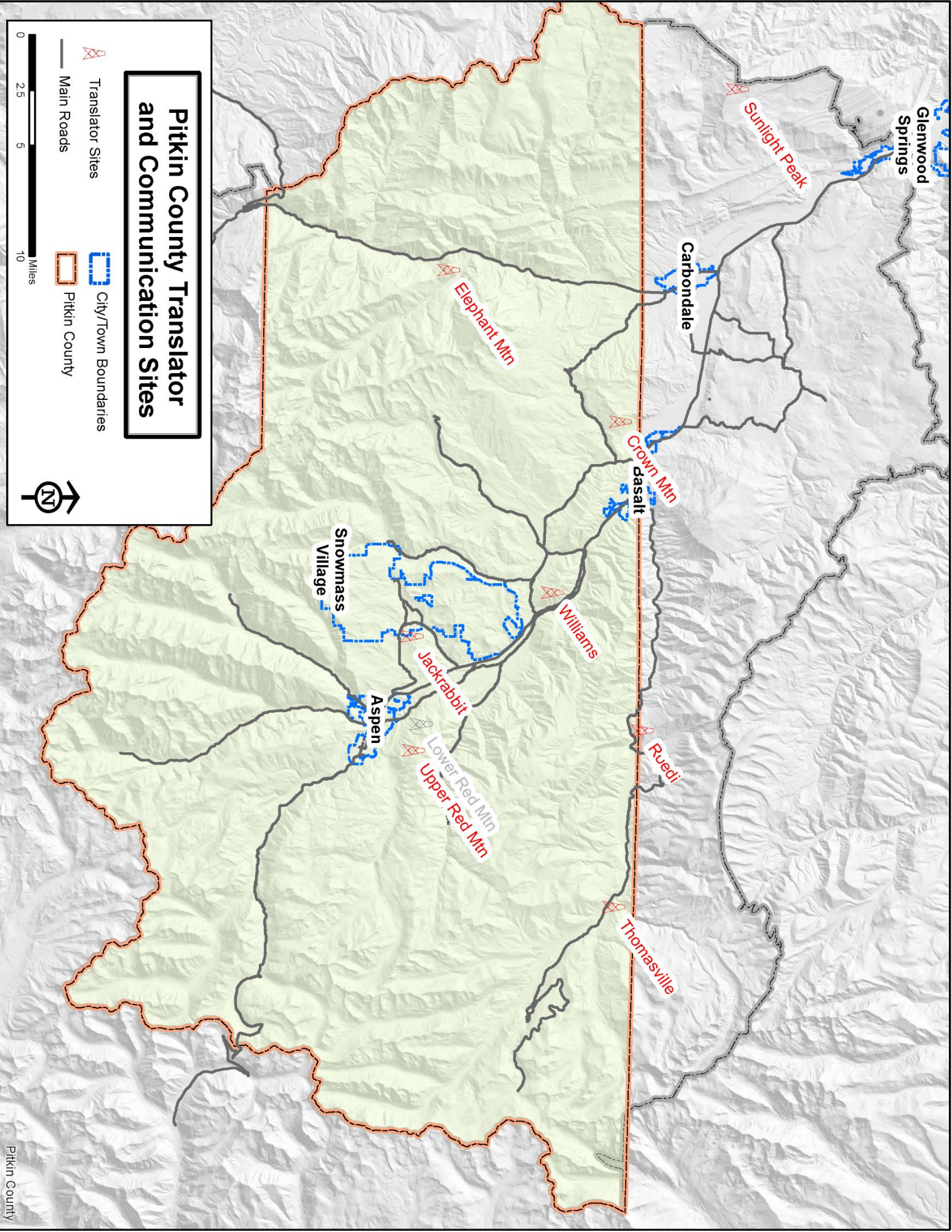
Allowing Pitkin County to provide high-speed internet, cable and telecommunication services pursuant to Senate Bill 05-152.

Shall Pitkin County, without increasing taxes, be authorized to provide, either directly or indirectly with public and/or private sector partner(s), all services restricted since 2005 by Title 29, Article 27 of the Colorado Revised Statutes described as High-Speed Internet Services (Advanced Service), Telecommunications Services, and/or Cable Television Services, to foster the expansion of such services, including but not limited to any new and improved high bandwidth service(s) based on future technologies, to residents, businesses, schools, libraries, nonprofit entities and other users of such services without limiting its Home Rule authority?



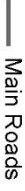

Result:

Yes	5,087	92%
No	436	8%


Site Name	Informal Location	Coverage/Viewshed	TV	FM	PC BI	Other Tenants	Special notes	Construction
Crown	Crown Mountain, Above Emma	Basalt, El Jebel, Missouri Heights	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Rise Broadband		Rebuilt 2010
Elephant	Elephant Hill, above Fioha Meadows	Crystal River Valley, Redstone, Swiss Village	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Rise Broadband	Helicopter Access Only	Rebuilt 2018
Jackrabbt	Jack Rabbit Ridge in Sky Mountain Park	Aspen, Snowmass, Owl Creek, AABC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	KSPN, KAJX, KRVG		Rebuilt 2019
Ruedi	Red Hill, above Ruedi Reservoir/Dam	Lower Frying Pan, Ruedi Shores	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			Rebuilt 2020
Upper Red	Above Aspen/Hunter Creek	Aspen, upper Roaring Fork	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	KDNK, KLXV	Solar Powered Site	Rebuilt 2022
Sunlight	Sunlight Peak, across from Sunlight Resort	Carbondale, lower Roaring Fork	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			Rebuilt 2018
Thomasville	Above Lime Creek	Upper Frying Pan/ Thomasville	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Hike or Helicopter Access Only	Rebuilt 2021
Williams	Williams Hill, above Watson Divide	Old Snowmass, Woody Creek	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Rise Broadband		Rebuilt 2016
Lower Red	Sunnyside Trail	Aspen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Decommissioned	Decommission 2019



Pitkin County Translator and Communication Sites

 Translator Sites
 City/Town Boundaries
 Main Roads
 Pitkin County

0 2.5 5 10 Miles



FM Translators

Pitkin County Facility FM Translators

KEY		(Received Frequency) Transmit Frequency Call Sign						
Station	Source	Sunlight	Elephant	Thomasville	Crown	Williams	Jack Rabbit	Upper Red
K(A/C)JX 85785	91.5 Aspen/ 88.9 Carbondale		(88.9) 91.5 <u>K218FE</u>	(88.9) 90.9 <u>K215BC</u>	(89.3) 91.5 <u>K218FG</u>	(88.9) 89.3 <u>K207DT</u>	90.9 KAJX License	(91.5) 91.1 <u>K216BF</u>
KDNK 88445	88.1 Carbondale		(88.1) 88.5 <u>K203EH</u>	(88.1) 94.9 <u>K235AP</u>	(88.1) 88.5 <u>K203EG</u>	(88.1) 94.7 <u>K234BJ</u>	(88.3) 99.9 <u>K260BZ</u>	88.3 KDNK License
KVOV 8764	90.5 Carbondale		(90.5) 93.9 <u>K230AG</u>	(90.5) 98.3 <u>K252FD</u>	(90.5) 90.1 <u>K211EX</u>	(90.5) 93.9 <u>K230AN</u>		(90.5) 101.5 <u>K268BJ</u>
KNDH 162283	96.7 Carbondale		(96.7) 98.7 <u>K254BQ</u>		(96.7) 92.3 <u>K222AN</u>	(96.7) 89.7 <u>K209EY</u>		
KSPN 43884	103.1 Aspen	(103.1) 97.3 <u>K247AD</u>	(97.3) 98.3 <u>K252CU</u>		(97.3) 100.1 <u>K261AK</u>			(103.1) 102.7 <u>K274AT</u>
KNFO 8780	106.1 Glenwood	(106.1) 94.3 <u>K232AD</u>	(94.3) 105.7 <u>K289BQ</u>	(94.3) 96.3 <u>K242AV</u>				
KGHT (S-HD1/ CAT Country HD2) 162386	100.5 Aspen				(100.5 HD2) 93.1 <u>K226BW</u>		(100.5 S-HD1) 99.5 <u>K258CO</u>	
KTND 170489	93.5 Aspen	(93.5) 100.9 <u>K265CS</u>		(100.9) 93.7 <u>K229AI</u>				100.1 KTND License
KMTS 12378	99.1 Glenwood	(99.1) 95.9 <u>K240AB</u>	(95.9) 102.3 <u>K272DB</u>	(95.9) 97.1 <u>K246AH</u>		(99.1) 105.5 <u>K288FV</u>		
KSNO 57337	103.9 Aspen	(103.9) 94.9 <u>K235AN</u>	(94.9) 103.5 <u>K278BD</u>		(103.9) 103.5 <u>K278AG</u>			
KPVW 3008	107.1 Aspen	(107.1) 104.3 <u>K282BJ</u>						
KRVG 88077	95.5 Glenwood						98.1 KRVG License	
KLXV 12361	91.9 Glenwood							89.9 KLXV License

Procedure for Evaluating FM Stations

The Translator Advisory Board (TAB) has the responsibility to evaluate, prioritize and recommend the selection of radio stations on the Pitkin County Translator System (PCTS). These procedures are established to identify the priorities used for advancing recommendations for changes, additions and/or deletions to the PCTS to the Board of County Commissioner (BOCC). It is the sole discretion of the BOCC to determine which stations will be broadcast from the PCTS.

Radio stations are guests of PCTS and do not acquire or hold any property rights in any aspect of PCTS. The TAB may periodically review the current allotments on PCTS to ensure stations continue to meet the criteria set forth as established for priority and present recommendations for change in allocations to the BOCC.

I. Definitions

- A. Emergency Alert System (EAS) – As specified in the FCC Rules and Regulations 47 CFR Part 11.
- B. Entertainment Programming – The music or talk programming a radio station carries to entertain and attract its audience.
- C. Format - The entire programming a radio station carries, consisting of entertainment and non-entertainment programming.
- D. Non-entertainment programming - All programming on a radio station other than entertainment programming, such as news, weather, public affairs programming, public service announcements, emergency announcements, commercials, programs responsive to local issues, etc.
- E. Priority – the rank for being provided allotments on the PCTS
- F. Technical reliability - A radio station is unreliable if, for more than one week, it is off the air, silent, or the audio is significantly impaired.
- G. Transmitter – A broadcast station's FCC licensed main transmitter.

II. Application for and Review of Allotment on PCTS:

- A. All stations presently on the PCTS and other stations that have expressed an interest for allocation will be notified by electronic mail or other current means of written communication on file when a vacancy occurs on the PCTS.
- B. Stations have 45 days from the date the notice to submit a written request for space on PCTS. Requests must be submitted in writing to the Pitkin County Translator, 530 E Main St 3rd Floor, Aspen Colorado 81611 or emailed to translator@pitkincounty.com

- C. Requests for space on PCTS will be reviewed by the TAB at a regular or specially noticed meeting. The meeting will be announced by a press release, noticed on the Pitkin County Translator webpage and stations that have requested space on the PCTS will be notified by mail or email.

III. Requirements for Stations:

- A. Stations must carry Emergency Alert System (EAS) messages targeted to Pitkin County from the National Weather Service in Grand Junction, Colorado and provide contact information to relay local emergencies.
- B. Stations must be technically reliable.

IV. Establishing Priority for Allotments:

Priority for placement of stations on PCTS shall be evaluated on the following criteria:

- A. Specific stations provided for in the Memorandum of Understanding adopted by BOCC Resolution 2001.209 and as amended by BOCC Resolution 050.2023:
 - 1. Roaring Fork Public Radio Inc. (aka Aspen Public Radio) FM station KAJX/KCJX, and Carbondale Access Radio Inc. FM station KDNK are granted certain first priority right to rebroadcast on PCTS.
 - 2. Colorado Public Radio (CPR) FM stations KVOV and KNDH are granted certain second priority rights to rebroadcast CPR's classical and indie formats on the PCTS.
- B. Stations delivering timely and accurate public safety, emergency, public service, and community information relevant to Pitkin County.
- C. Stations providing non-entertainment programming relevant to Pitkin County residents.
- D. Stations having a transmitter site and/or FCC city of license within Pitkin County.
- E. Change in ownership, and/or change in format, or a decrease in technical reliability could prompt a review by the TAB to determine if the allotment on PCTS is still in the best interest of the residents of Pitkin County as it relates to the allocation criteria.

V. Evaluation for Translator Allotments:

The TAB shall take into consideration the following factors in evaluating the assignment of translators on the PCTS:

- A. Availability of translators, tower space, technical feasibility, and space within the PCTS building(s).
- B. Cost to the PCTS of equipment, services, subscription, and any additional expenses required to add the station.
- C. The PCTS will not carry stations in areas the station can serve directly or through their own translators.

VI. Allotment Designation and Adoption:

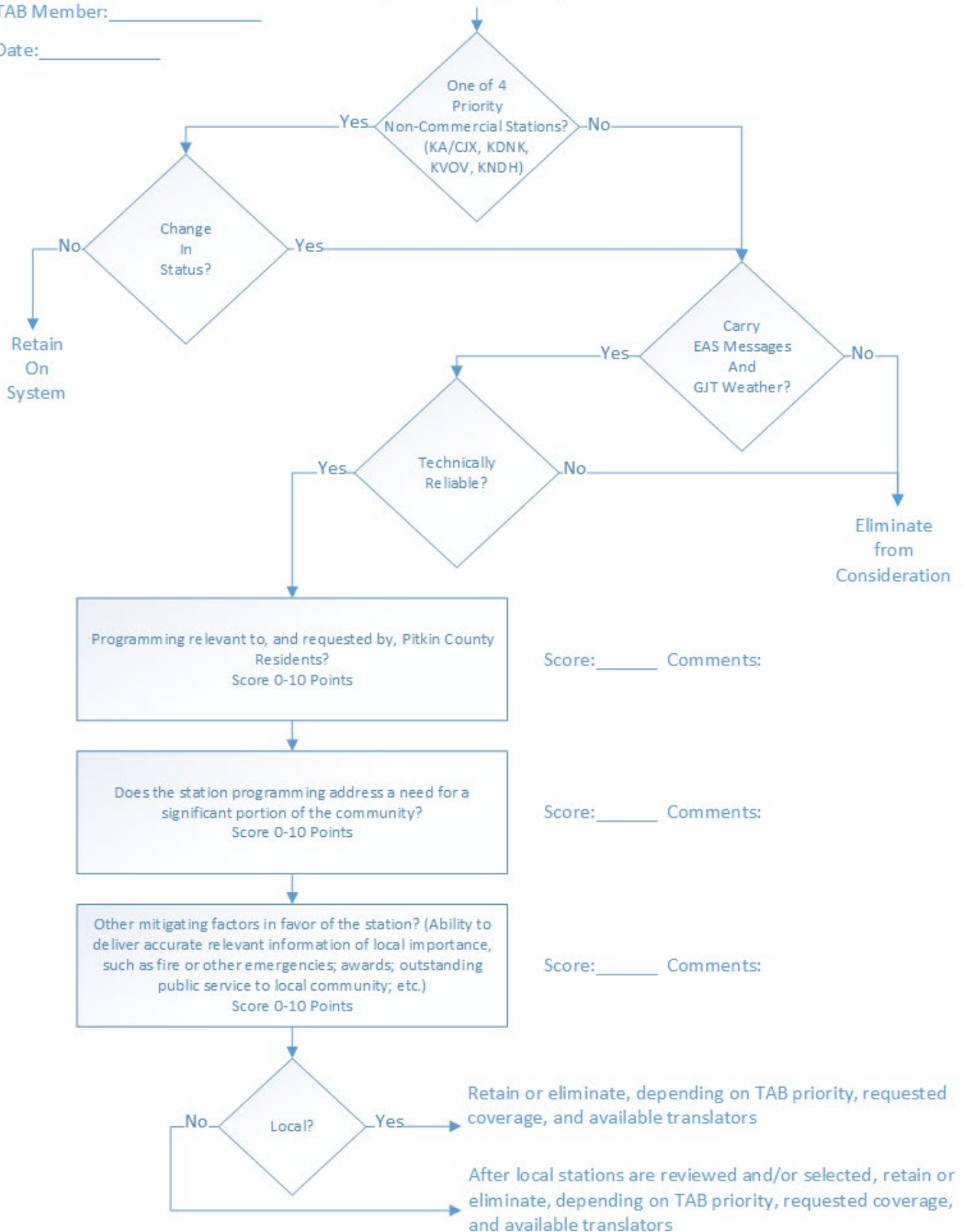
- A. The TAB makes recommendation to the BOCC for station allotments based on the completed evaluation of stations requesting available space on the PCTS.
- B. If a station applying for space is not recommended for allotment by the TAB, a notice will be mailed out to the affected party(s) indicating the date the BOCC will hear the recommendation and when Public Hearing is scheduled.
- C. The BOCC will formally adopt or deny the TAB's recommendations at a regularly scheduled meeting.
- D. The station may be represented at the BOCC meeting in person or may submit a letter to the BOCC for review as part of the hearing process providing station allotments.
- E. If the BOCC supports the TAB recommendation(s) for allotment(s) on PCTS, the station(s) will be notified in writing.
- F. If chosen for the PCTS, the station must submit a re-broadcast consent letter to Pitkin County prior to being added to the PCTS.

Station Name: _____

TAB Member: _____

Date: _____

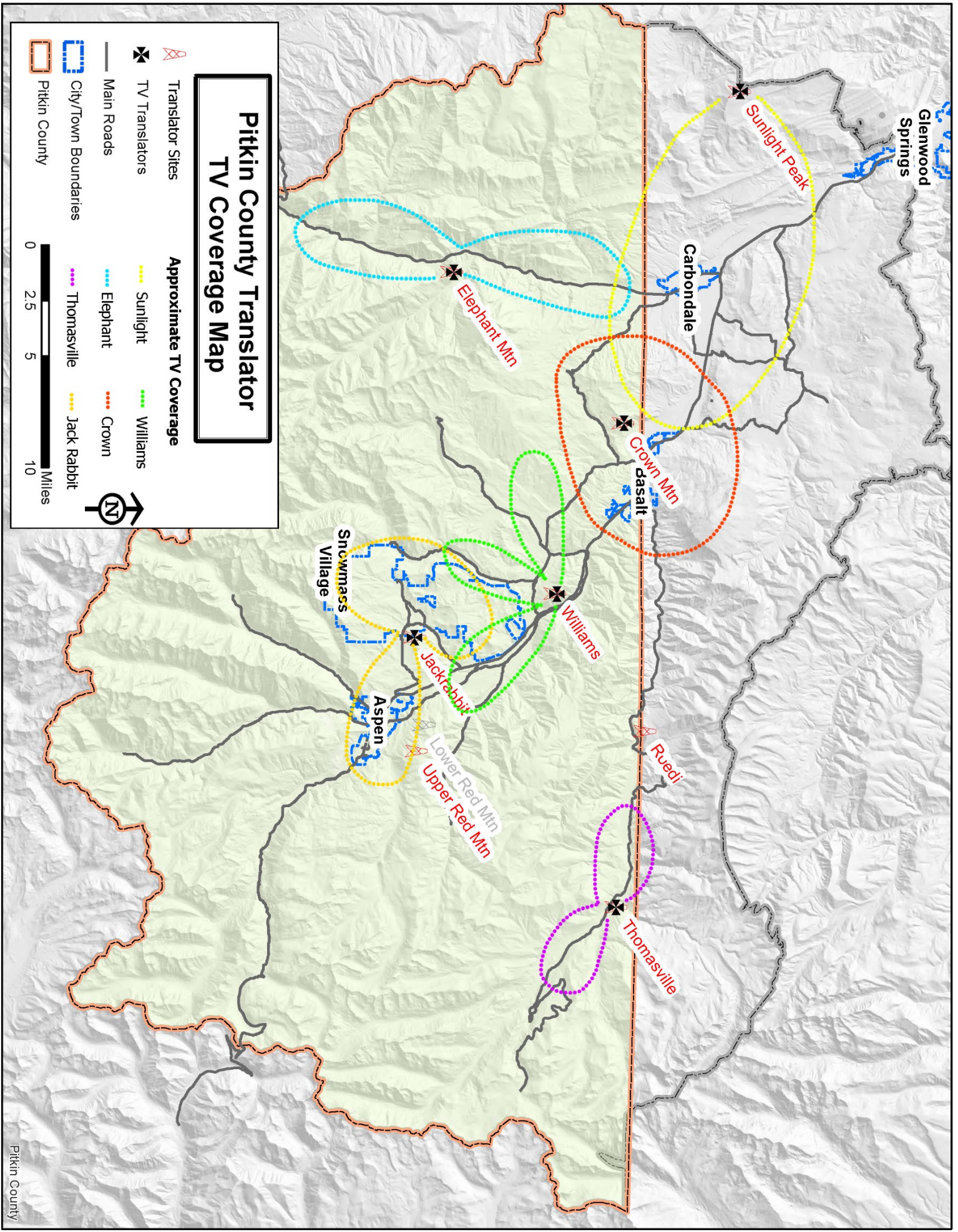
(Current or Applicant)



TV Translators

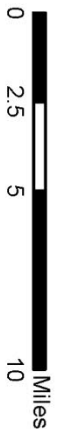
Translator sites rebroadcast network television programming throughout Pitkin County and the greater Roaring Fork Valley. Each TV translator site hosts six FCC-licensed TV translators and rebroadcast identical copies of 21 unique programs. Programming is received over the air from Grand Junction at Sunlight Peak or streamed via IP multicast into the Pitkin County network. Pitkin County is located within the Denver Television Market Area (TMA).

Virtual Channel	Programming	Station ID	Source
2-1	The CW	KWGN Denver	IP Multicast
3-1	MeTV	KREG Glenwood Springs	Over the Air
3-2	Heroes & Icons	KREG Glenwood Springs	Over the Air
3-3	StartTV	KREG Glenwood Springs	Over the Air
3-4	Catchy	KREG Glenwood Springs	Over the Air
3-5	Movies!	KREG Glenwood Springs	Over the Air
3-6	MeTV+	KREG Glenwood Springs	Over the Air
3-7	Story	KREG Glenwood Springs	Over the Air
4-1	FOX	KFQX Grand Junction	Over the Air
4-2	CBS	KREY Grand Junction	Over the Air
4-3	Escape	KFQX Grand Junction	Over the Air
4-4	Grit	KFQX Grand Junction	Over the Air
7-1	ABC	KMGH Denver	IP Multicast
9-1	NBC	KUSA Denver	IP Multicast
11-1	CGTV	County Government Television	IP Multicast
12-1	Grass Roots TV	Aspen Community Television	IP Multicast
18-1	RMPBS	KRMJ Grand Junction	Over the Air
18-2	PBS Kids	KRMJ Grand Junction	Over the Air
18-3	PBS Create	KRMJ Grand Junction	Over the Air
18-4	PBS World	KRMJ Grand Junction	Over the Air
20-1	MyTV	KTVD Denver	IP Multicast



Pitkin County Translator TV Coverage Map

	Translator Sites		Approximate TV Coverage		Williams
	TV Translators		Elephant		Crown
	Main Roads		Thomasville		Jack Rabbit
	City/Town Boundaries				
	Pitkin County				



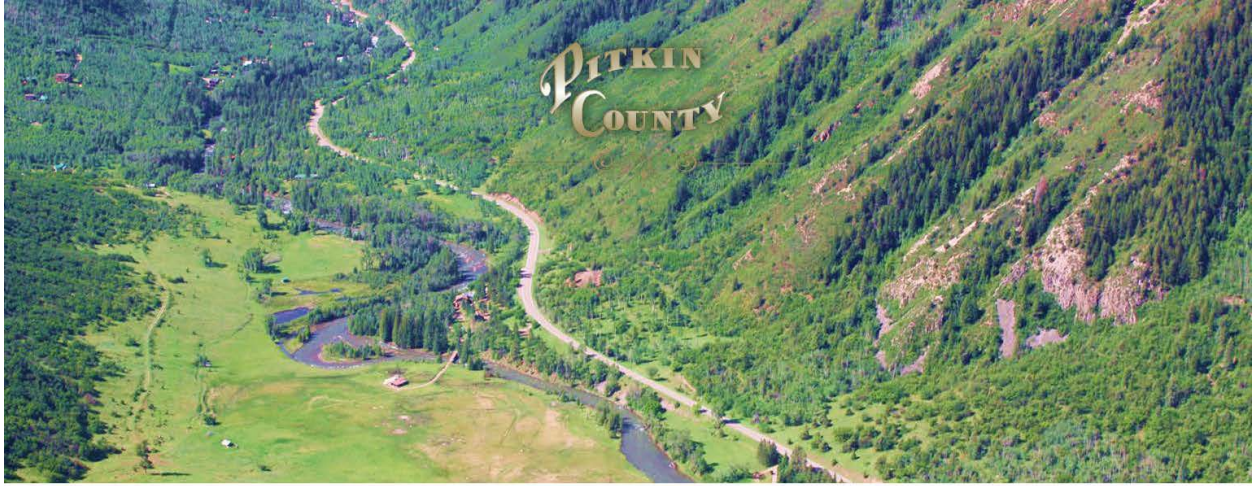
Pitkin County Broadband Initiative (PCBI) History

A strategic initiative of Pitkin County includes the expansion of internet accessibility throughout the Roaring Fork Valley and its surrounding river drainages. The interests of the Pitkin County residents were clarified by the voter approval of Referendum 1B in 2011, permitting the usage of the Translator Fund “to include researching and facilitating the extension of wireless communication and internet services within Pitkin County”, and was emphasized with the voter approval of Ballot Question 1A in 2015, opting out of Colorado State Senate Bill 05-152 which would otherwise disable the County from facilitating such services. The growing digital divide and immediate need for remote digital connectivity was particularly evident throughout the COVID-19 pandemic.

Pitkin County commissioned a broadband study which was completed in 2016 and outlined the needs and potential coverage options for underserved and unserved residents in Pitkin County. The conclusions from this study emphasized the future of fiber as the most reliable medium for high-speed internet services, and proposed a fixed-wireless solution for last-mile connectivity throughout Pitkin County’s remote drainages, utilizing the County’s existing telecommunication tower infrastructure as a backbone to a countywide network.

From these recommendations, the County worked with the fulfiller of the study to develop an Open Access Network to deploy broadband services. The County would be owner of the physical assets (telecommunications sites, including towers and electronics) through which digital services are provided. A “network operator” would digitally manage the services across the network, including provisioning of consumer-end electronics and technical support for last-mile wireless services. Lastly, the network would be open for any internet service provider (or ISP) to become a tenant and provide internet services to local residents, utilizing Pitkin County-owned infrastructure as a “middle mile” between the public internet and unserved residences. All entities would benefit from this public-private partnership (PPP) through a profit-sharing agreement.

In 2017, Pitkin County published a request for proposals (RFP) looking for a private entity to work as the PCBI Network Operator. Mammoth Networks was selected, and the blueprint for internet services through the PCBI was presented to the BOCC in the slides provided below.



Pitkin County Broadband Initiative

BLUEPRINT
02 October 2018

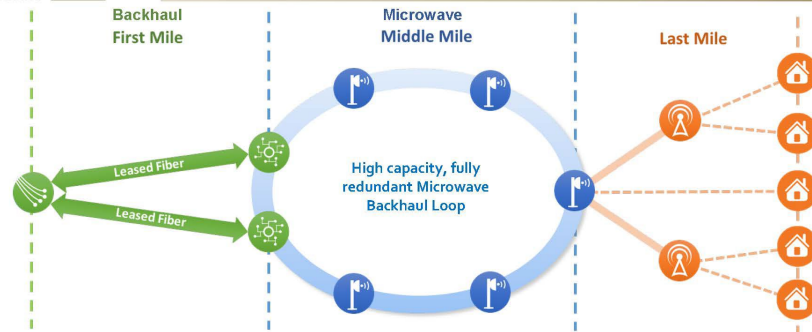


Goals and Objectives

Pitkin County Broadband Initiative (PCBI)

- Leverage existing infrastructure and partnerships to create an open access middle-mile network that enables high speed internet (Broadband) to homes, businesses, schools, libraries, medical facilities, government offices and other public places throughout Pitkin County & Roaring Fork Watershed.
- Network must be:
 - Affordable (\$70 monthly)
 - Abundant (25 MBPS down / 3 MBPS up or FCC definition)
 - Redundant (Multiple paths in and out of the Roaring Fork Valley)
 - Resilient (Minimum service disruption)

Network Design Overview



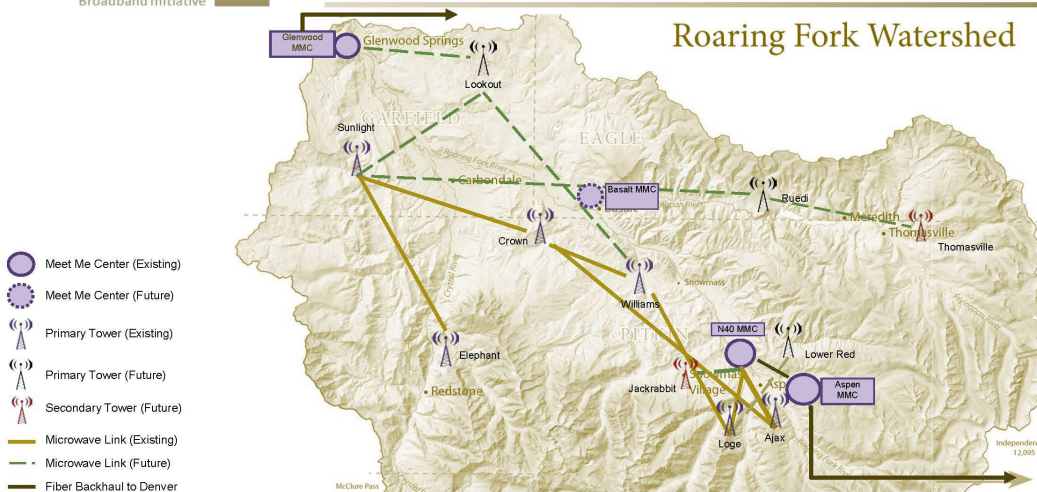
- Lease lit fiber to feed the microwave middle-mile
- Use multiple carriers for diversity
- Add fiber aggregation points into middle mile

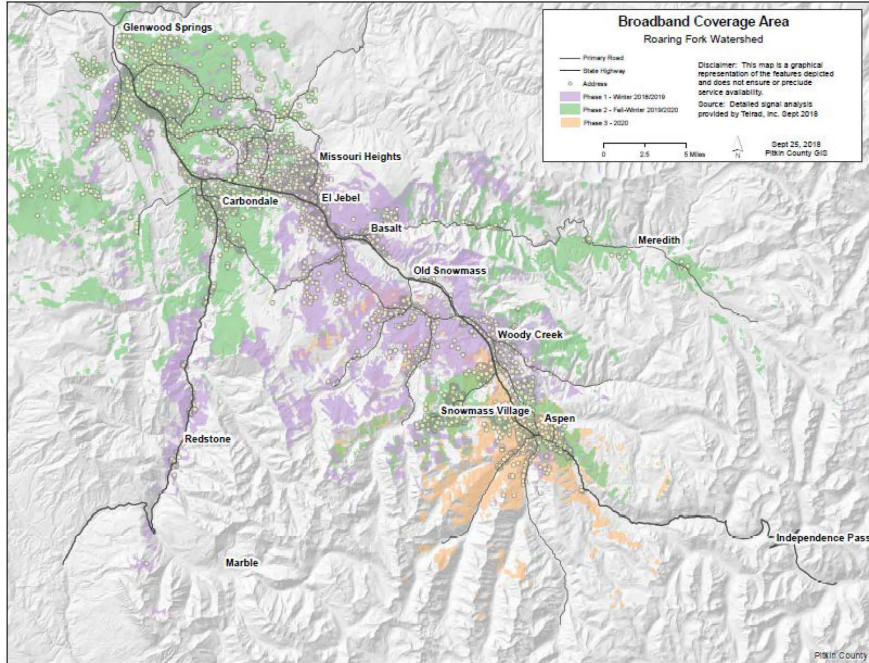
- Leverage existing mountain top infrastructure
- Deploy a flexible, open-access network that can serve a variety of project models
- Fully-redundant, self-healing 4GB microwave loop for high availability

- Identify relay tower location, types and cost
- Determine ownership and capital risk
- Develop ISP standards (equipment, location on tower, cost for access, etc.)

Service Area Assets

Roaring Fork Watershed



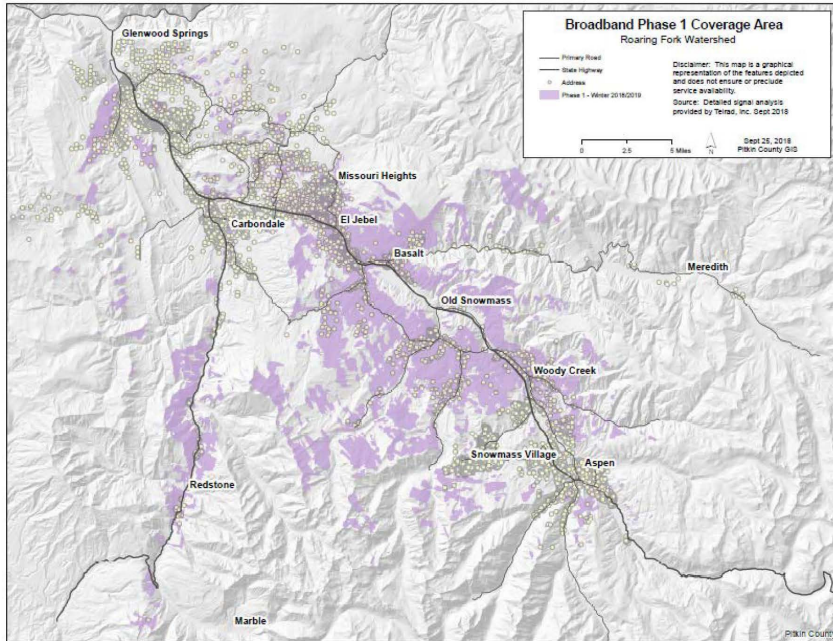


Coverage Analysis



Phasing

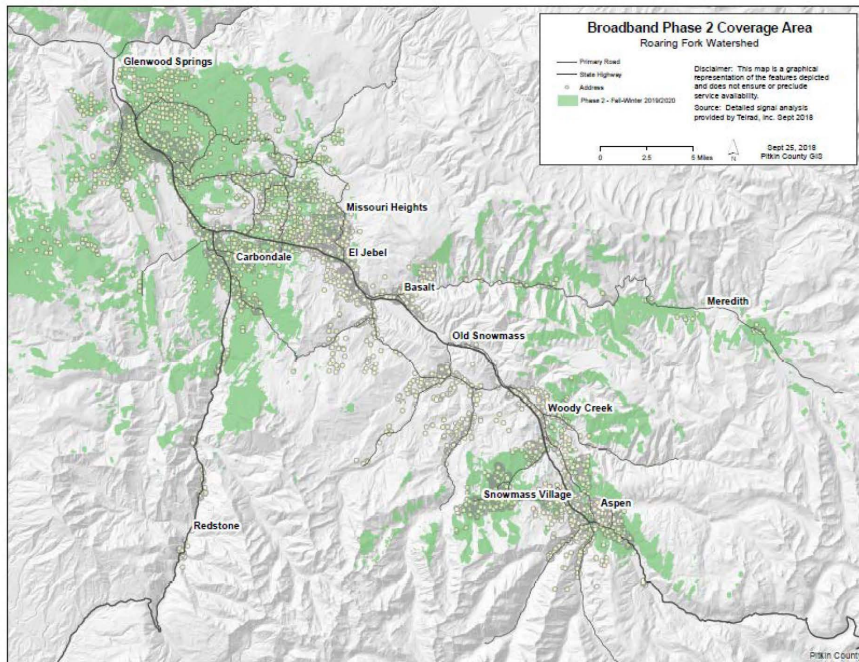
Site	Anticipated Completion Site Infrastructure	Anticipated Completion Wireless Access Points	Phase
Crown	Completed	Winter 2018/2019	1
Elephant	Fall 2018	Winter 2018/2019	1
Williams	Completed	Winter 2018/2019	1
Lookout Mountain	Winter 2018	N/A – Garfield County site	
Sunlight	Fall 2018	2019 (dependent upon Garfield County discussions)	2
Ruedi	Fall 2019	Winter 2019	2
Jackrabbit	Fall 2019	Winter 2019	2
Thomasville	Fall 2019	Winter 2019	2
(2) Tertiary Towers	Fall 2019	Winter 2019	2
Lower Red	Fall 2020	2020	3
(2) Tertiary Towers	Fall 2020	2020	3



Phase 1

10/02/2018

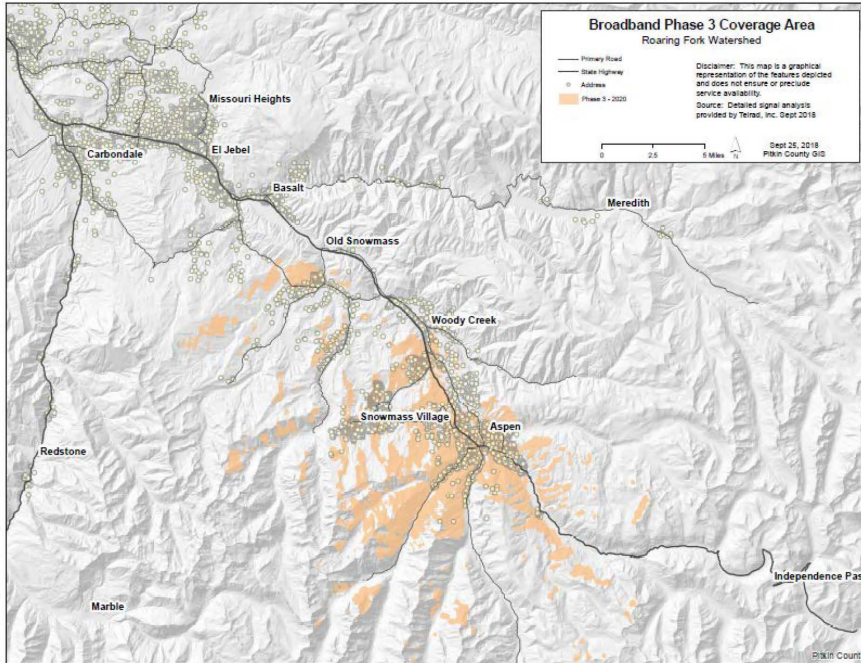
7



Phase 2

10/02/2018

8



Phase 3

31/02/2018

9



3P Roles and Responsibilities

Mile	Role	PPP	Description / Definition
Middle Mile Infrastructure	Network Owner	Pitkin County	County owns the core infrastructure and core expansion of this project.
Middle-Mile Operations	Network Operator	Mammoth Networks	<ul style="list-style-type: none"> Identifies, selects and arranges for leased fiber services to feed the network Manages middle-mile transport across the microwave network Responsible for network configuration, design and maintenance Identifies, selects, locates and arranges for ISP services with County input.
Last Mile	Wholesale Providers & Internet Service Providers (ISPs)	Private Providers (TBD)	ISPs are the face of the project to the customer. Responsible for: <ul style="list-style-type: none"> Purchase middle-mile transport from the Network Operator Installation, maintenance and upgrades of equipment and services to the customer Last-mile customer service and customer satisfaction.

The Open Access Model is Like a Toll Road



- The Network Owner and Operator build and maintain the road. Everyone who wants to use it pay a toll fee



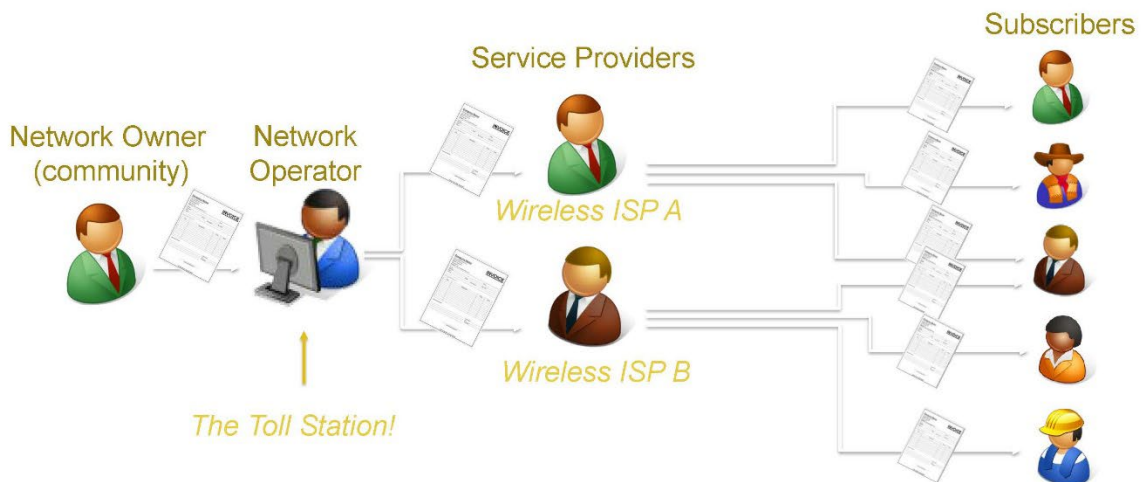
More services sold on the network means faster payback (and happier subscribers!)

10/02/2008

The Open Access Business Model



- Multiple ISPs on the same network compete for the end customers with quality and price of service



10/02/2008

Role	PPP	Investment / Responsibility
Network Owner	Pitkin County	<ul style="list-style-type: none"> Owns tower, microwave and wireless equipment (access points). County investment in assets from tower to access equipment ensures long-term sustainability of project outside of 3P
Network Operator	Mammoth Networks	<ul style="list-style-type: none"> Responsible for subscriber units for ISPs Managing backhaul network on microwave system. Shares in the maintenance of wireless (access) points. Operator has capital investment in project (subscriber units)
Wholesale Providers & Internet Service Providers (ISPs)	Private Providers (TBD)	<ul style="list-style-type: none"> ISPs responsible for own backhaul to Glenwood or Aspen MMC Preferably through Project THOR, but provides choice to ISP ISP competition is in price and customer service

Combined, Owner and Operator are able to maintain and monitor the infrastructure investments and monitor the backhaul to its best use.

Revenue Share Model





Cost Model Summary

NETWORK OWNER COST MODEL SUMMARY (without General Fund borrow)

	2018	2019	2020	2021	2022	2023	2024	2025
BEGINNING BALANCE	\$1,808,919	\$1,157,913	(\$563,253)	(\$951,304)	(\$820,587)	(\$505,926)	(\$186,854)	(\$238,208)
Translator Revenue	\$1,349,882	\$1,391,743	\$1,250,406	\$1,048,468	\$1,082,940	\$1,118,357	\$1,118,357	\$1,118,357
General Fund Loan		\$0						
County % of Revenues	25%	25%	25%	30%	35%	40%	45%	50%
Network Owner Revenue	\$2,580	\$78,020	\$160,250	\$228,528	\$270,384	\$307,296	\$344,208	\$381,120
TOTAL REVENUE	\$1,352,462	\$1,469,763	\$1,410,656	\$1,276,996	\$1,353,324	\$1,425,653	\$1,462,565	\$1,499,477
Capital Expenses (BB and Tx)	\$1,264,767	\$2,241,968	\$873,059	\$152,020	\$16,521	\$47,048	\$422,600	\$390,180
Operating Expenses	\$738,701	\$921,960	\$952,648	\$994,259	\$1,022,141	\$1,059,534	\$1,091,320	\$1,124,059
General Fund Repayment				\$0	\$0	\$0	\$0	\$0
Other Expenses								
TOTAL EXPENSES	\$2,003,468	\$3,163,928	\$1,825,707	\$1,146,279	\$1,038,662	\$1,106,581	\$1,513,919	\$1,514,239
ENDING BALANCE	\$1,157,913	\$(536,253)	\$(951,304)	\$(820,587)	\$(505,926)	\$(186,854)	\$(283,208)	\$(252,970)



Cost Model Summary

NETWORK OWNER COST MODEL SUMMARY (with General Fund borrow)

	2018	2019	2020	2021	2022	2023	2024	2025
BEGINNING BALANCE	\$1,808,919	\$1,157,913	\$963,747	\$548,696	\$579,074	\$694,074	\$713,146	\$1,261,792
Translator Revenue	\$1,349,882	\$1,391,743	\$1,250,406	\$1,048,468	\$1,082,940	\$1,118,357	\$1,118,357	\$1,118,357
General Fund Loan		\$1,500,000						
County % of Revenues	25%	25%	25%	30%	35%	40%	45%	50%
Network Owner Revenue	\$2,580	\$78,020	\$160,250	\$228,528	\$270,384	\$307,296	\$344,208	\$381,120
TOTAL REVENUE	\$1,352,462	\$2,969,763	\$1,410,656	\$1,276,996	\$1,353,324	\$1,425,653	\$1,462,565	\$1,499,477
Capital Expenses (BB and Tx)	\$1,264,767	\$2,241,968	\$873,059	\$152,020	\$16,521	\$47,048	\$422,600	\$390,180
Operating Expenses	\$738,701	\$921,960	\$952,648	\$994,259	\$1,022,141	\$1,059,534	\$1,091,320	\$1,124,059
General Fund Repayment				\$100,000	\$200,000	\$300,000	\$300,000	\$300,000
Other Expenses								
TOTAL EXPENSES	\$2,003,468	\$3,163,928	\$1,825,707	\$1,238,662	\$1,238,662	\$1,406,581	\$1,813,919	\$1,814,239
ENDING BALANCE	\$1,157,913	\$963,747	\$548,696	\$579,074	\$694,074	\$713,146	\$361,792	\$47,030



Proposed Next Steps

1. 3rd Quarter Supplemental – Phase 1 Wireless Equipment
2. Include General Fund borrow in 2019 budget process
3. Execute Network Operator Agreement and ISP Agreement(s)
4. Continue to work with Garfield County on organization structure moving forward

5/10/2020

17

In 2018, Pitkin County continued to build out its middle-mile infrastructure to support the PCBI. Upon completion of construction of Phase 1 infrastructure, Mammoth Networks signed on officially as the Network Operator for PCBI.

In early 2019, Mammoth Networks published an RFP looking for ISPs to join the PCBI Network. Visionary Broadband and Pathfinder Internet responded to this RFP and were approved by the County as partners in the PCBI.

Since 2019, the PCBI has expanded upon rebuilt tower infrastructure to include internet services at the telecommunications sites known as Williams, Crown, Elephant, Jack Rabbit, Ruedi, and Thomasville.


Additional expansion and partnership opportunities with Garfield County were explored, but ultimately deemed unsustainable.




In 2022, Mammoth Networks notified the County of its intent to not renew its contract as the PCBI network operator. Based on the current investment and existing customer base, Mammoth Networks recommended that Pathfinder Internet become the new network operator. To mitigate its dual roles as both Network Operator and ISP, the County entered a new contract with Pathfinder Internet as its "Network Services Provider" for the PCBI. This restructure was presented to the BOCC in the following slides.



Pitkin County Broadband Initiative (PCBI) Network Operator Discussion

Introductions



	<p>Pitkin County Jeff Krueger Telecommunications Manager jeff.krueger@pitkincounty.com</p>
	<p>Visionary Broadband / Mammoth Networks Brian Worthen CEO bworthen@visionarybroadband.com</p>
	<p>Pathfinder Farr Shepherd President farr@path-finder.us</p>

Agenda



- PCBI Network Overview
- Mammoth Networks Overview
- Pathfinder Company Overview
- Proposed Restructure
- Transition Plan
- Discussion / Questions

PCBI Objectives



- Leverage existing infrastructure and partnerships to create an open access middle-mile network that enables high speed internet (Broadband) to homes, businesses, schools, libraries, medical facilities, government offices and other public places throughout Pitkin County & Roaring Fork Watershed.
- Network must be:
 - Affordable (\$70 monthly)
 - Abundant (25 MBPS down / 3 MBPS up or FCC definition)
 - Redundant (Multiple paths in and out of the Roaring Fork Valley)
 - Resilient (Minimum service disruption)

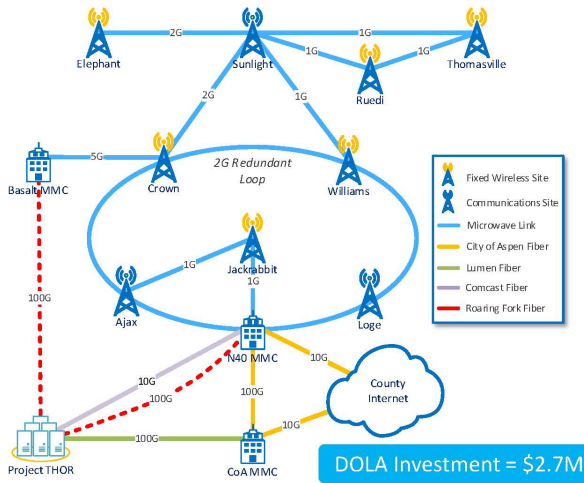
Presented
to BOCC
October
2nd, 2018

PCBI Background



Timeline	DOLA Investment
2014-2015 Broadband Study Phase 1	\$150K
2015-2016 Broadband Study Phase 2	\$150K
2016-2018 Wireless Broadband Deployment Phase 1 (Crown, Williams and Elephant)	\$900K
2019-2021 Wireless Broadband Deployment Phase 2 (Jackrabbit, Ruedi and Thomasville)	\$700K
2021-2023 Roaring Fork Broadband Fiber Project	\$800K
Total DOLA Investment	\$2.7M

PCBI Network



- Backbone is a high capacity, middle-mile microwave network
- Six (6) fixed wireless broadband sites
- Three (3) Meet-Me Centers in Aspen and Basalt
- Connects to NWCCOG Project THOR
- Fully redundant and resilient architecture
 - Redundant microwave links
 - Lumen and Comcast 10G circuits
 - Future 100G with the Roaring Fork Broadband project

Public Private Partnership (PPP)



Role	Partner	Agreements	Revenue Share	Responsibility
Network Owner	Pitkin County	Network Operator Agreement	5%	<ul style="list-style-type: none"> Owns tower, microwave, and wireless equipment (access points). Maintains tower infrastructure and manages microwave backhaul system
Network Operator	Mammoth Networks	ISP Agreement	45%	<ul style="list-style-type: none"> Manages end-to-end connectivity with 24 hour network operations center Maintains Meet Me Center switches and Access Points Buys and configures subscriber units
ISPs	Pathfinder / Visionary		50%	<ul style="list-style-type: none"> ISPs responsible for own internet backhaul to Aspen MMC Installs and maintains subscriber units Performs servicing and billing of end customers

PCBI Agreements



- Network Operator Agreement
 - Agreement between the County and Mammoth Networks to operate and maintain the PCBI network.
 - Fully executed in January, 2019 – one year term with up to four one-year extensions
 - Mammoth has given notice that they will not renew for a fifth term (current contract ends Jan. 2023)
- ISP Agreement
 - Agreement between Mammoth and the two ISPs (Pathfinder and Visionary)
 - Agreement expires in Jan. 2023 once the Network Operator Agreement dissolves

Subscriber Data



Current Subscribers (on six tower sites)

ISP	Subscribers	Percentage
Pathfinder	210	95%
Visionary	12	5%
Total	222	100%

Pathfinder has 95% of the PCBI customers

Predicted vs. Actual Subscribers (on six tower sites)

Predicted	Actual	Percentage
798	222	27.8%

The original cost model anticipated nearly 800 customers on six towers

Subscriber Data



- PCBI is serving many customers that had no access to high-speed broadband in the past
 - 72 customers in the Crystal River Valley (from Elephant)
 - 40 customers in the Frying Pan River Valley (from Ruedi and Thomasville)
 - 70 customers in Old Snowmass (from Williams)
- Service is affordable, redundant, and resilient
 - \$70/month for 25M down (no upfront cost)
 - Redundant microwave and fiber links
 - High availability (minimal downtime)
 - Compare to StarLink at \$110/month and an upfront cost of \$600



Mammoth Networks Overview PCBI



- Mammoth has been involved with PCBI since the Phase 2 Broadband Study (2015)
 - Developed the PCBI wireless architecture
 - Developed the Project THOR network architecture for NWCCOG
 - Negotiated leased circuits with Lumen and Comcast to significantly reduce County costs for internet
 - Installed network switch and wireless components on County tower sites
 - Awarded the Network Operator contract for PCBI
 - Pitkin has had an outstanding relationship with Mammoth Networks



Mammoth Networks Overview PCBI



- Given market factors, Mammoth has decided not to renew the Network Operator Agreement. The main reasons include:
 - StarLink competition – a satellite wireless service that is achieving 100M down / 10M up in our tests
 - PCBI model is underperforming – original model anticipated nearly 800 customers on six tower sites by the end of 2022.
 - Costs have escalated, including materials and labor.
 - Company Direction – Mammoth is phasing out the Network Operator business unit. Visionary is focusing on fiber projects and other commitments in two states

- Pathfinder has been with PCBI since the start of Phase 1 deployment (2018)
 - Has 95% of the customers on the PCBI network
 - Excellent customer service – performs network monitoring and informs customers of outages
 - Local to the Roaring Fork Valley – can quickly respond to install requests and outages
 - Pitkin has an excellent relationship with Pathfinder and we are collaborating on multiple projects
- Other company initiatives and presence

Proposed Restructure

Role	Partner	Agreements	Revenue Share	Responsibility
Network Owner	Pitkin County	New Network Operator Agreement	5%	<ul style="list-style-type: none"> • Owns tower, microwave and wireless equipment (access points). • Maintains tower infrastructure and manages microwave backhaul system
Network Operator/ISP	Pathfinder		95%	<ul style="list-style-type: none"> • Manages end-to-end connectivity with 24 hour network operations center • Maintains Meet Me Center switches and Access Points • Installs and maintains subscriber units • Performs servicing and billing of end customers

- Pathfinder has 95% of the customers and is the logical choice to take over the network
- Pathfinder is local to the Roaring Fork Valley and can quickly respond to outages
- No other ISPs are interested in taking over the PCBI Network

Proposed Restructure



- **Transitional Simplicity**
 - Pathfinder is local, equipped, and prepared
 - Good working relationships

- **Maintains connectivity for existing customers**
 - Aligns with initial objectives of the PCBI
 - Intermediary solution as new technologies and opportunities emerge

- **Cost Effective**
 - No impact on current Pitkin County budget/revenues

Broadband Trends



- **FCC is proposing to change the minimum standard from 25M/3M to 100M/20M for download and upload speeds**
 - Fixed wireless technologies cannot support the new standard (maximum is typically around 50M for download speeds)
 - ARPA and IIJA grant funding requires the new proposed standard for last mile connections.

Roaring Fork Fiber (RFB)

In further pursuit of broadband opportunities and expansion, Pitkin County is working with Holy Cross Energy and other local municipalities to increase fiber connectivity throughout the Roaring Fork Valley. This includes current Pitkin County fiber deployments for connecting key infrastructure from Glenwood Springs to Aspen, Basalt, and Snowmass Village. This robust middle-mile infrastructure will provide additional resiliency and bandwidth capacity to residents of Pitkin County and into key access points of the County's extensive mountaintop wireless network. As this multi-municipal partnership continues to develop, TAB members will play a growing role in advising the County on its contribution and as advocates for continued broadband expansion.