

Grand County Broadband Collective

Concept Statement March 2020



“... in 2019 we had issues in a branch due to two separate outages due to Century Link, it was two separate outages, one of them lasting almost 3 days...it caused our system and phones to be out, and we had to close early...”

Elena Ahrens, Branch Manager, Assistant Vice President, Bank of the West, Fraser, CO

“The boards choice to host a meet-me-center and participate in a regional middle-mile cooperative in 2019 has changed what was an unacceptable situation with regards to imaging for our patients.” He notes one example prior to the project of an unacceptable scenario for with slow and non-redundant broadband service of a stroke victim requiring remote experts to assess whether there is internal bleeding to the brain. He said, “When the internet is working, it takes 5 minutes to upload and not much longer to get an assessment from a remote expert so physicians can react quickly, but when the internet is on a backup system for the common instances when the system was down, it sometimes was hours or days at a time, that same critical remote review can take more than 30 minutes to upload.”

Dr Coburn, CEO at Middle Park Health

Problem Statement:

A significant percentage of Grand County lacks access to robust, affordable, resilient broadband and a competitive marketplace for that service. With 15,321 residents in 6 incorporated towns as well as unincorporated community centers spread out across 4,842 square miles, Grand County is a difficult geography for broadband providers to serve efficiently. The dispersed populations lack the critical market mass. As a result, businesses suffer with unreliable credit card and other critical internet-based core services. Local governments, two school districts, citizens as well as visitors who might choose to telecommute, work from home, or develop home-based startup businesses are at a disadvantage. This is an impediment to growing the citizens, institutions, businesses, economic development in general, and to visitors who are vital to growing the tax base.

This challenge is not unusual across Colorado. Other rural counties struggle with erratic or no broadband service at all, relegating the community economically and socially to services from a prior century. Beyond just the availability of last mile broadband, a single fiber optic cable cut or service outage on middle mile connections to Denver can cause long term adverse impact on

businesses, homeowners, guests, travelers, schools, government and public safety personnel. These outages also affect cell phone service availability.

Grand County also has seen robust growth and economic activity and it hosts resort amenities that span from Grand Lake at the base of Rocky Mountain National Park to Winter Park which is one of the top 10 busiest resorts in Colorado. Though quaintness is part of the charm of these Grand County amenities, increasingly visitors, residents and businesses the support them expect reliable high-speed broadband as part of what defines a modern community.

Models of a Broadband Improvement Project for Grand County Exist Nearby

Northwest Colorado Council of Governments has been active in supporting local broadband initiatives, from concept to implementation for over 6 years now providing free technical assistance to local governments. Entities in Grand County which choose to move forward will find they have technical support and many neighboring peers with various models of public broadband experience. NWCCOG has recently deployed a 200-gig middle mile network through Grand County. Within the NWCCOG broadband partners region there are many examples of communities meeting similar challenges in recent years.

NWCCOG has supported municipalities, counties, rural electric co-ops and other community anchors in developing local broadband projects to provide last mile internet services. Each is tailored around available infrastructure, willing partners, political landscape and whomever steps forward as champions. In some cases, these are municipal or county owned networks. In other cases, they leverage a public-private partnership where the public entity makes some investment lower the barriers which then enables private ISPs to enter the market. The common thread is seeing the gap and making a commitment to improve at a local level.

Rio Blanco County to the West of Grand County, for instance, has invested more than \$15M of general fund dollars to fulfill a commitment to deliver affordable broadband to all residents. They own and built the fiber and tower infrastructure to enable a local service provider to deliver gigabit services to the premise in Meeker and Rangely, as well as broadband (minimum 25/3 Mbps) wireless service to remote areas of the county.

Within the NWCCOG region, ambitious local projects are currently underway in Pitkin County, Garfield County, Summit County and the Towns of Breckenridge, Glenwood Springs and Eagle (to name a few), each with a different set of partnerships, means and outcomes. In coordinating with and supporting each of these projects, NWCCOG gains experience and knowledge. These projects leveraged local and DOLA Broadband funds available in Colorado to develop and deploy their solutions. The Rio Blanco county project has leveraged over \$18M of local funds matched by DOLA grant dollars. Yampa Valley Electric Association (YVEA) is in the process of building out fiber to the premise for gigabit service and broadband wireless in Craig, Haden and across it's service area. YVEA is leveraging Colorado Broadband Deployment Board grant funds to build this network and is also a participant in Project THOR in Steamboat Springs, Hayden, and Craig. This is just within the NWCCOG region. Other examples which could inform a Grand County

broadband solution exist on the West Slope with Delta Montrose Electric Association delivering gigabit services to communities Delta, DOLA has committed to providing \$5M in matching funds for broadband projects from 2019 through 2023. Montrose, Paonia, and other smaller remote towns which are not dissimilar to Grand County. Looking forward, DOLA has committed to providing \$5M in matching funds each year for broadband projects from 2019 through 2023.

“Grand County appears at a hinge point right now with respect to broadband services. What is already occurring is interested parties are stepping forward which could deliver a collection of significantly improved broadband services across the 2 to 3 Project THOR host communities, or the working group could strategize to become a coherent group to leverage such benefit across the entire county.”

Jon Stavney, Executive Director, NWCCOG

What is the first step in Grand County?

Identify the willing community partners to collaborate and investment to in seeking a comprehensive approach to supporting better broadband in Grand County. This may require a commitment from a core group to ground truth and develop the concepts in this document to construction level pricing, and seek institution and public support for a deployment plan.

Because of commitments and investments already made or in the works through key local partners, including Middle Park Health and Mountain Parks Electric, a Grand County effort is not starting from scratch. Such a collaborative group would be well positioned to improve broadband in some places immediately, and county-wide affordably and within the near term.

Key Decisions in 2019 that created this opportunity

Many opportunities aligned to bring key stakeholders to the table to discuss what it would take to serve all the population centers of the county with broadband service in coming years.

- Northwest Colorado Council of Governments developed Project THOR, a 400-mile middle mile loop of fiber with I-70 fiber from Denver to Rifle, through Meeker, Craig, Steamboat Springs through Grand County, back to Denver. This public project is supplying affordable, redundant broadband opportunities to 10 communities which have come together to fund the cooperative effort.
- The County’s primary healthcare provider, Middle Park Health which has locations in Granby and Kremmling has chosen to host local meet me centers at two location and is considering a third in Fraser. These centers are served by Project THOR, a regional, public broadband network. Middle Park Health contracted with NWCCOG to host two 10G meet-me-centers at hospital locations in Kremmling and Granby which are now active. In doing so, their board stated that their connection would first allow them to provide mission critical speeds for their core purpose of serving patients, and secondly, allow them to facilitate improved service to the communities in which they reside

- Middle Park Health announced a 2020 groundbreaking on a hospital facility in Fraser and convened a working group to discuss how their hosting a meet-me-center there could be leveraged by other partners. MPH is in the process of planning that third branch in Fraser.
- Recently, both Fraser and Winter Park have done local broadband feasibility studies, as has Mountain Parks Electric.
- In late 2019, the Mountain Parks Electric board announced an investment of \$2M to construct middle-mile-fiber from Winter Park to Granby, to Grand Lake, Hot Sulphur Springs, Kremmling with connections to Walden and Heeney. This project is to meet their internal needs, but could also have greater benefits. This is long-term project with many hurdles which will break ground at the Southern end of the County at Winter Park in 2020 with rolling deployment in other locations beyond Granby TBD. Leverage Mountain Parks Electric 2020/2021 fiber build projects to deliver reliable, affordable, sustainable broadband services to community anchor institutions and ISPs could provide broadband to the more remotely located citizens in Grand County.
- The Towns of Fraser and Winter Park have recently completed broadband feasibility studies and are poised to take action
- At the invitation of MPH, a group of interested parties has been convening for the past six months to explore how to leverage these opportunities to serve more of Grand County. The group consisting of MPH, MPE, Grand County, Fraser, Winter Park and NWCCOG have been meeting to discuss how to leverage these parts into a greater benefit across the county.
- NWCCOG continues to coordinate with CDOT on acquiring access to fiber installed along state and interstate highways. There is not currently CDOT fiber or conduit installed along Highway 9 from Silverthorne to Kremmling nor along U.S. 40 from Empire to Steamboat, though it may be possible to leverage Grand County efforts to accelerate that installation which would also be beneficial to further enhance redundancy of Project THOR.

What Serving Grand County in a Comprehensive Manager Might Look Like:

Costs estimates for next steps

NWCCOG shared this document with the following concepts with a few consultants to obtain ballpark cost estimates (without benefit of an RFP process) for the consulting work required to take the recommendations in this concept document to the engineering design phase. This engineering design for the county-wide project scope would be the documentation required for budgeting and grant request submission. Based on these limited conversations, a budget estimate for this consulting work is in the range of \$125,000 depending upon final scope and requirements.

What would be in the scope of work

Deployment of local projects is tailored based on the geography, existing infrastructure, local leadership, partnerships and other opportunities available locally. At a conceptual level, without an extensive feasibility analysis, the working group thinks serving much of Grand County could look like the following:

Kremmling: The Middle Park Health Center is already hosting a Meet-me-Center in Kremmling that has already attracted one ISP. This ISP is leveraging that location to offer wireless broadband service to businesses and households in Kremmling at a cost of \$59 per month. Other ISPs can also negotiate with MPH under similar pricing terms to compete in this market.

Rural Corridors Highways 9 & 40: Lower Blue River/Heeneey, Wolford Mountain, and West Highway 40: Byers Canyon to Kremmling: The future opportunity provided by MPE extending fiber south on Highway 9 and along Hwy 40 offers the opportunity for Grand County and northern Summit County, with modest public investment, to seek proposals from ISPs to provide wireless broadband service (using MPE as the regional middle mile connection) to remote and dispersed communities in West Grand County. Further assessment would need to be made as to whether the County would need to participate financially or with “in-kind” use of right-of-way or towers to make each location feasible. Possible partnerships include CDOT which eventually intends to have fiber along all state roadways. Summit County which has discussed how to best provide broadband to the “lower Blue River” area. There is an additional opportunity for a non-commercial provider redundant fiber connection to Project THOR at Silverthorne which could add resilience and upgrade the Kremmling to a 100-gig circuit. These types of projects would be eligible, in part, for federal and state rural broadband grant funding.

The Town of Grand Lake and nearby communities: the future investment by Mountain Parks Electric building fiber North from Granby to Grand Lake also makes it possible for Grand County to help the Town of Grand Lake and surrounding communities to be served by additional ISPs. The Town could become its own Meet-me-Center host. This could be funded partly by a partnership between county and town leveraging DOLA fund.

The Town of Hot Sulphur Springs has a unique broadband infrastructure opportunity. Given the compact town layout and the County campus being centrally located, the town could leverage DOLA grant funds to help fund local middle mile fiber infrastructure connecting County and local community anchor institutions. This provides cost savings for the project, makes local infrastructure more attractive to competitive providers and increases consumer options for redundant, higher speed service at lower prices. Inter-town connectivity would be served through MPE fiber from both Granby and Kremmling.

Granby: This community is already served by the Granby Meet Me Center at MPH. That opportunity has not been leveraged yet to provide services across the town. This could be as easy as writing an RFP and seeking a private partner. The MMC at MPH provides an opportunity for multiple ISPs to connect and compete using infrastructure provided at the MPH location via MPE and local fiber and wireless to directly serve residents and businesses.

Winter Park, Fraser and Upper Fraser Valley: Construction of fiber by MPE and plans by MPH to construct another medical facility in Fraser opens an opportunity to host an MMC that would serve both communities, and the many anchor institutions. A Fraser and Winter Park fiber loop could provide businesses and guests experiences equal to or better than any other world class

facility. This could be a separate RFP or bundled with an RFP for other communities for a greater critical mass of customers. See Appendix XX with the story of Town of Vail fiber and wireless initiatives.

Jackson County/Walden: It is not a part of Grand County alliance, however, this area north of Grand County is within the MPE service territory and has suffered from a lack of broadband service and price competition. Partnership between DOLA, MPE and NWCCOG could bring an MMC to Walden and provide the primary and alternate paths needs for additional ISPs to come to market. Remote portions of North Highway 9 in Grand County and Highway 125 could take advantage of connections to Walden.

Project THOR: is different than existing incumbent middle-mile services. While part of the Project THOR network leverages incumbent provider existing fiber, Project THOR equipment is lighting these physical paths and delivers affordable bandwidth to rural Colorado MMCs. The network equipment manages traffic across multiple geographically diverse paths and allows for a single fiber failure to not affect the integrity and availability of broadband service. By connecting to THOR, Mountain Parks Electric fiber could be of mutual benefit.

These are a few opportunity narratives. The real advantage will come from willing partners in those communities coming together to discover what synergies of mutual benefit exist, and what gaps could be met by funding key infrastructure together. There are any number of ways a group could organize. The next steps would be to agree to pursue further, confirm players and RFP for the next level of analysis.

Estimates would include recommendations for Funding Vehicles and Opportunities

1. DOLA Broadband Fund – Middle Mile funding for local governments and Special Districts
2. DORA Broadband Deployment Board Fund – Middle and Last Mile funding for service providers
3. USDA RUS – Federal funding for service providers in unserved areas
4. FCC eRate and Rural Healthcare Program
5. Service provider and local government/special district grant matching

The Estimate could be done with A La Carte Options with Possible Next Steps by Community

The following could be incremental steps if a comprehensive approach is not taken, or could feed up, into a county-wide approach.

1. Propose a Grand County Broadband Strategy
 - a. Decide if this approach should address Grand County Overall
 - b. Obtain the Broadband Plans from both MPE and Towns of Winter Park and Fraser to understand the challenges, market need, and recommendations
 - c. Existing plans serve as basis to be leveraged into a county-wide broadband plan, saving repeated work and money.
 - d. Work with State of Colorado Broadband Program Office to further refine broadband services reports from existing providers

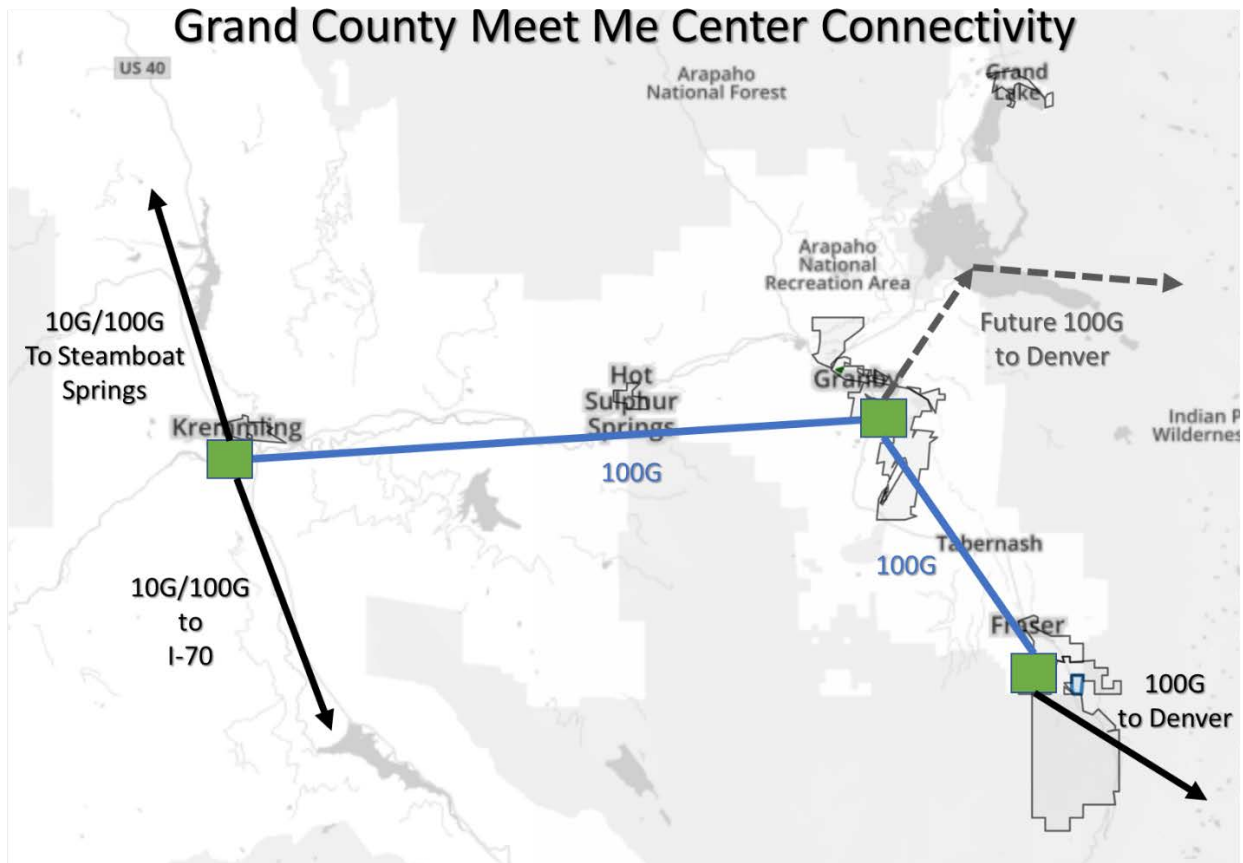
- e. Consider releasing an RFP for a market needs analysis, engineering plans and funding plan for all of Grand County
 - i. Plan would integrate the existing broadband plans, Project THOR program plans, Mountain Parks Electric fiber plans and future needs
 - ii. Evaluate current provider infrastructure and obtain geographic and infrastructure needs to support their future plans and balanced with community needs
 - iii. Deliver specific recommendations county-wide and for each community
 - iv. Grand County can obtain 50/50 funding from DOLA for this engineering study and plan
 - f. Potential Plan Outcomes
 - g. Utilize Mountain Parks Electric dark and lit fiber to build Grand County centric core network to connect Fraser/Winter Park Meet Me Center to Denver and Granby Meet Me Center
 - h. Create additional Meet Me Centers and smaller Meet Points to support ISPs and community anchor institutions across the county
 - i. Meet Me Centers and Meet Points will be interconnected and resiliently supported utilizing Mountain Parks Electric fiber and Project THOR regional connectivity
 - j. Governance for Meet Me Centers and Meet Points will be provided by Grand County Broadband Taskforce
 - k. Project THOR will provide open access transport connectivity, discounted Direct Internet Access services, and regional broadband resilience to all Meet Me Centers across Grand County
 - l. Mountain Parks Electric will service needs of broadband providers needing access in unincorporated Grand County or very rural areas of the county
2. Fraser/Winter Park Specific Plan/Subplan
 - a. Formalize the working group and determine next steps for Frasier/WP
 - b. Build Fraser/Winter Park Meet Me Center as a standalone secure structure in Fraser at the site of the new Middle Park Health facility in 2021 per working group agreement
 - c. Establish fiber connectivity and path to connect Fraser/WP Meet Me Center with Granby, Kremmling and Denver
 - d. Determine MMC ownership and funding vehicles
 - e. Determine MMC operator
 - f. Engage and market MMC to last mile service providers
 - g. Establish budget, grant opportunities, and deadlines
 - h. Designate projected build and launch dates
 - i. Utilize prebuilt and prewired self-contained data center for MMC location
 - i. Develop project plan and submit for grants and funding requests
 - j. Connect local governments and community anchor institutions
 3. Granby MMC – Specific Plan/Subplan
 - a. Finalize and publish pricing for ISPs and community anchors
 - b. Market MMC to last mile service providers
 - c. Determine and design locations for microwave and service antennas on roof
 - d. Develop plan for MPE fiber connections to MMC
 - e. Create project plan and determine needed grant and funding requests if needed
 - f. Connect Granby local government, County, and community anchor institutions
 4. Kremmling – Specific Plan/Subplan
 - a. Finalize and publish pricing for ISPs and community anchors
 - b. Market MMC to all last mile service providers

- c. Determine and design locations for microwave and service antennas on roof
 - d. Develop plan for MPE fiber connections to MMC
 - e. Create project plan and determine needed grant and funding requests if needed
 - f. Connect additional Kremmling local government, County, and community anchor institutions
5. Hot Sulphur Springs – Specific Plan/Subplan
 - a. Formalize the working group and determine next steps for Hot Sulphur Springs
 - b. Evaluation potential MMC locations near Hot Sulphur Springs
 - c. Establish fiber connectivity and path from Mountain Parks Electric
 - d. Determine MMC ownership and funding vehicles
 - e. Determine MMC operator
 - f. Market MMC to last mile service providers
 - g. Establish budget, grant opportunities, and deadlines
 - h. Designate projected build and launch dates
 - i. Develop project plan and submit for grants and funding requests
6. Grand Lake – Specific Plan/Subplan
 - a. Formalize the working group and determine next steps for Grand Lake
 - b. Evaluation potential Meet Me Center locations near Grand Lake
 - c. Establish fiber connectivity and path from Mountain Parks Electric
 - d. Determine MMC ownership and funding vehicles
 - e. Determine MMC operator
 - f. Market MMC to last mile service providers
 - g. Establish budget, grant opportunities, and deadlines
 - h. Designate projected build and launch dates
 - i. Develop project plan and submit for grants and funding requests
7. Unincorporated Area – Specific Plan/Subplan
 - a. Formalize and working group and determine plan to address these areas
 - b. Possible solutions would include
 - i. Mountain Parks Electric is lead and responsible for supporting limited additional connection points to their fiber network for last mile providers
 - ii. Creation of remote “non-permanent” remote tower sites for providers that would be connected to Mountain Parks electric fiber
 1. These sites are BLM approved in Rio Blanco County and require no NEPA studies
 2. Tower infrastructure would be publicly owned and leased to support multiple wireless service providers
 3. These could also support multiple public safety uses including; wildland fire, search and rescue and law enforcement incidents
8. Highway 9 and US 40 – Specific Plan/Subplan
 - a. Formalize the working group and determine next steps for adjacent communities
 - b. Establish fiber connectivity and path from MPE and others
 - c. Determine additional fiber build costs and funding vehicles
 - d. Market communities to last mile service providers
 - e. Establish budget, grant opportunities, and deadlines
 - f. Designate projected build and launch dates
 - g. Develop project plan and submit for grants and funding requests

If necessary, the scope could include collecting better Data on Grand County since state level data shows a gap in Broadband Delivery

Data submitted by service providers to the Colorado Broadband Program Office (BPO) shows that 97% of Grand County addresses has at least 25/3 available. This data appears to be skewed by wireless service provider data showing delivery of 25/3 to the entire county. This is likely due to in part to the data collection methodology used for wireless service providers by the Colorado BPO. Like all other service data reported to the Colorado Broadband Office, this data will need to be validated with real work customer experiences. The reality on the ground in Grand County is that the current incumbent providers despite some receiving CAF II funding have not significantly improved last mile services across the county. While network upgrades may have increased connection speeds within one quarter mile of US 40, they have not improved the availability to their networks nor the costs for their network services in the county. The FCC does not require CenturyLink to provide detailed data on service improvement nor address specific data.

Primary Broadband Connectivity for Grand County



Mountain Parks Electric Draft Fiber Map

