Application to DHCD Submitted through CAMS

Mount Rogers Planning District Commission

MRPDC Regional Broadband

Application ID:	75707102020111335
Application Status:	In Progress - DHCD
Program Name:	Virginia Telecommunications Initiative 2021
Organization Name:	Mount Rogers Planning District Commission
Organization Address:	1021 Terrace Drive Marion, VA 24354-4137
Profile Manager Name:	Stephanie Patton
Profile Manager Phone:	(276) 783-5103
Profile Manager Email:	spatton@mrpdc.org

Project Name:	MRPDC Regional Broadband
Project Contact Name:	Aaron Sizemore
Project Contact Phone:	(276) 783-5103
Project Contact Email:	asizemore@mrpdc.org
Project Location:	1021 Terrace Drive Marion, VA 24354-4137
Project Service Area:	Smyth County, Washington County, Wythe County

Total Requested Amount: $7,870,000.00

Required Annual Audit Status: Accepted

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	**$7,870,000.00**	**$11,955,033.00**	**$19,825,033.00**
Construction	$7,870,000.00	$11,955,033.00	$19,825,033.00
Total:	**$7,870,000.00**	**$11,955,033.00**	**$19,825,033.00**

Budget Narrative:

The project consists of 6517 passings across ~627 miles of fiber for a total project cost of $19,825,033, and a total cost per passing of $3,042.05. VATI's total cost per passing is $1,207.24. Point Broadband is contributing $6,491,233 of private funds

Questions and Responses:

1. Project Description and Need

   Describe why and how the project area(s) was selected. Describe the proposed geographic area including specific boundaries of the project area (e.g. street names, local and regional boundaries, etc.). Attach a copy of the map of your project area(s). Label map: Attachment 1 – Project Area Map.

Answer:

This project leverages the partnership of the Mount Rogers PDC, the cooperation of three counties (Smyth, Washington, and Wythe), and the efficiency of one central service provider, Point Broadband.

Washington County
Communities served: Town of Damascus, Konnarock, Green Cove, Taylor's Valley, Widener Valley, Rhea Valley, and Lodi
The project area includes over 60 square miles in the southeastern quadrant of Washington County and encompasses over 200 named roads. The eastern project boundary terminates at/near both the Smyth/Grayson county lines (Hwy 58 and Konnarock Rd), and the western boundary extends to at/about the Middle Fork of the Holston River near Route 712 and Hwy 58. The northern boundary covers areas in/around the Lodi community (Hwy 91), and the southern perimeter extends to the Tennessee state line (Hwy 91).

The County recognizes internet service as an infrastructure attribute necessary to support long-term economic viability and overall community livability. In 2017, the Board of Supervisors created the Telecommunications Advisory Committee to identify areas of the county experiencing coverage gaps and to pursue opportunities to improve service to residents and businesses. The proposed service area includes portions of 8 US Census tracts.

Examination of publicly available FCC maps and Virginia's Broadband Availability Map and Integrated Broadband Planning and Analysis Toolbox (CIT/VT/CGIT/VITA) reflects the presence of underserved or unserved areas throughout the County's project area, including the core population center in/around the Town of Damascus (pop. +/- 709). The County's prior awareness of internet accessibility challenges in and around the communities/places identified in the project service area continues to be amplified by the COVID pandemic. 3 public schools, 4 public safety facilities, 2 community centers, 2 medical clinics, a public library, town hall, 28+ places of worship, and 100+ businesses are located within the proposed service area. Columbus McKinnon Corporation, one of the County's top ten largest manufacturing employers is also located within the project service area, along with critical public infrastructure features supporting electrical, water/wastewater service, and 3 solid waste convenience stations. Similarly, nationally-acclaimed outdoor recreational and cultural heritage assets are included within the project service area, including Appalachian Trail, Virginia Creeper National Recreation Trail, Iron Mountain Trail, Crooked Road, TransAmerica Trail, Virginia's Birding and Wildlife Trail, Daniel Boone Heritage Trail, and Mount Rogers National Recreation Area; at least 250,000-500,000 people visit these destinations annually. The availability of reliable, affordable, high-speed internet is necessary to support the continued economic growth and public safety needs for the area, as well as to allow the community to address challenges and opportunities.

Smyth County
Communities Served: in and around Konnarock, Sugar Grove, route 11 north of Atkins, Cedar Springs Road to Wythe County
Smyth County has a long history of farming communities, hardworking folks and simple living. For generations, this way of life did not have a downside until the digital boom. While other metropolitan areas are growing and thriving in this digital age, the County, as well as many other rural areas of Virginia, is suffering. The topography of what once made Smyth County a sought-after place to live has now become our Achilles heel. County residents, community leaders, business owners, and children long for both the simple life of farms, beautiful views, quiet neighborhoods and online education, telemedicine, being able to video-chat family members, order groceries online, or to be able to pick up the phone to dial 9-1-1 if there is an emergency. These are all normal, daily items that County residents should not be asked to be without. The areas identified in our application contain a large number of residents who are without internet completely; as well as residents who are underserved.

Wythe County
Communities Served: in and around Speedwell, Crockett, Cripple Creek, Slate Springs Branch and Cedar Springs Road
Crisscrossed by two interstate highways (81 & 77), the county-seat sees nearly 70,000 motorists daily. Unfortunately, there exists a massive disparity in income, infrastructure, and life expectancy between residents who reside in the county's modern central community and those who live only a handful of miles beyond the town limits. This disparity and inequality was made extraordinarily apparent in the early days of the COVID pandemic as both medical providers and students were unable to utilize basic telehealth and telelearning resources afforded to millions of other Americans -- placing the most vulnerable in our locality at even greater health risks -- the governor's COVID-19 Equity Leadership Task Force identified these precise areas as being most susceptible to the virus due to the inequalities they're faced with in daily life; the lack of broadband has also hurled yet another roadblock to a countless number of impoverished Virginians.

This project provides high-speed broadband to residents of southwest and southcentral Wythe County -- some of the most impoverished communities in the region. This project gives the residents of places like Speedwell, Crockett and Cripple Creek (where the family median income is $41,354, compared to the state family median

income which is nearly double this amount at $71,564) a fighting chance to compete in a world that is increasingly seeing more inequities and generational poverty.

2. List existing providers in the proposed project area and the speeds offered. Please do not include satellite. Describe your outreach efforts to identify existing providers and how this information was compiled with source(s).

Answer:

Century Link offers DSL service to most of the area. It is widely known that DSL does not offer a consistent and reliable bandwidth of 25/3. We have confirmed this through customer contact, field audits and form 477 reviews. Comcast is the closest primary cable provider, and we have confirmed no overlap with their service and the project area. Point Broadband (Sunset on the 477) does have backbone and middle mile in some of the project areas built by BVU, but we do not have any significant residential coverage in the project footprint.

3. Describe if any areas near the project have received funding from federal grant programs, including but not limited to Connect America Funds II (CAF II), ACAM, ReConnect, and Community Connect. If there have been federal funds awarded near the project, provide a map verifying the proposed project area does not conflict with these areas. Describe if there are Rural Digital Opportunity Fund (RDOF) eligible census blocks located in the proposed project area. Label Map: Attachment 2 – Documentation on Federal Funding Area.

Answer:

[redacted]

4. Overlap: To be eligible for VATI, applicants must demonstrate that the proposed project area(s) is unserved. An unserved area is defined as an area with speeds of 25/3 mbps or less and with less than 10% service overlap within the project area. Describe any anticipated service overlap with current providers within the project area. Provide a detailed explanation as to how you determined the percentage overlap. Label Attachment: Attachment 3 – Documentation Unserved Area VATI Criteria.

Answer:

Point Broadband did a comprehensive review of the eligibility of the project area using the following tools and methods: review of the FCC 477 form, review of the CIT coverage mapping, review of the Southwest Virginia Broadband study, field audit of pole attachments in the project area, door to door surveys within the project area and review of project area addresses on the cable provider website. The results of these efforts confirm the project area is primarily served by CenturyLink DSL and various satellite services. Our design is centered around avoiding overlap with the closest cable provider completely. Point Broadband may spend its own funds to build into those areas beyond the grant construction.

5. Total Passings: Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 10 Megabits per second download and 1 Megabits per second upload speeds, as they will receive priority in application scoring. For projects with more than one service area, each service area must have delineated passing information. Label Attachment: Attachment 4 – Passings Form

a. Of the total number of passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area. Describe the methodology used for these projections.

b. Provide the number of serviceable units in the project area that have 10/1 mbps or less. Describe the methodology used for these projections.

Answer:

Representatives from Washington, Smyth, and Wythe counties did a comprehensive review of the project area and determined the passings as defined by the categories on the Passings Form chart. This included digital review, business license review, field audit, review with local leadership, and review of county data for business and anchor institution existence.

Given that we identified the primary provider for the project area as CenturyLink DSL, we feel that an overwhelming majority of the project has 10/1 or less. CenturyLink DSL advertises a range of service on the FCC 477 form from 1.5/.512 to 60/5. We can find no evidence of any DSL ever providing speeds of 60/5. Our field audit has the average DSL speed at less than 10/1.

6. For wireless projects only: Please explain the ownership of the proposed wireless infrastructure. Please describe if the private co-applicant will own or lease the radio mast, tower, or other vertical structure onto which the wireless infrastructure will be installed.

Answer:

Not applicable.

7. Speeds: Describe the internet service offerings, including download and upload speeds, to be provided after completion of the proposed project. Detail whether that speed is based on dedicated or shared bandwidth, and detail the technology that will be used. This description can be illustrated by a map or schematic diagram, as appropriate. List the private co-applicant's tiered price structure for all speed offerings in the proposed project area, including the lowest tiered speed offering at or above 25/3 mbps.

Answer:

Package Name & Speed	Package Price per Month
Lite 25 Mbps X 5 Mbps	$ 54.95
Basic 50 Mbps x 25 Mbps	$ 65.95
Perform 100 Mbps x 50 Mbps	$ 70.95
Performance Plus 200 Mbps x 100 Mbps	$ 80.95
Ultra 500 Mbps x 250 Mbps	$ 100.95
Extreme 1 Gbps x 500 Mbps	$ 130.95

The bandwidth will be dedicated and not shared. The broadband will be delivered on a fiber to the home connection carried over a GPON network.

8. Network Design: Provide a description of the network system design used to deliver broadband service from the

network's primary internet point(s) of presence to end users, including the network components that already exist and the ones that would be added by the proposed project. Provide a detailed explanation of how this information was determined with sources. If using a technology with shared bandwidth, describe how the equipment will handle capacity during peak intervals. For wireless projects, provide a propagation map for the proposed project area with a clearly defined legend for scale of map. Label Map: Attachment 5 – Propagation Map Wireless Project.

Answer:

Point Broadband of Bristol, Virginia operates a Gigabit Passive Optical Network (GPON) to deliver triple play services to the communities of Southwest Virginia. GPON has the advantage of being able to support multiple users through a single optical fiber reducing equipment and satisfying both high density and rural areas (GPON.com, n.d.). Furthermore, Wang Zhaoqing of the IEEE denotes, "besides the transmission characteristics of good quality, large capacity, and long distance, GPON has the advantages of low maintenance cost, high confidentiality, and strong anti-jamming capability" (Zhaoqing, 2011). The following sections describe how Point Broadband uses this technology to provide superior broadband service to the consumers of Southwest Virginia.

Point Broadband's broadband Internet services originate from two geo-redundant locations at Equinix in Ashburn, Virginia, and Digital Realty in Atlanta, Georgia. Within each diverse location Point Broadband is provided access to the Internet from both XO Communications, and Level3 (CenturyLink) service providers. Furthermore, the customer experience is enhanced by the connection to each location's Internet Peering Exchange (Equinix Internet Exchange, Digital Realty Internet Exchange). An Internet exchange allows Internet Service Providers (ISPs) to directly interconnect networks and exchange Internet Protocol (IP) traffic. The exchanges provide the Point Broadband end user with a lower latency network, and increased redundancy through the availability of more paths and improved routing.

Traveling from each redundant location, for increased reliability Point Broadband has chosen transport partners offering three diverse paths over 10 Gigabit fiber links. For example, from the origination point in Atlanta, traffic is delivered through one of two 10 Gigabit paths of which both terminate in the Central Office located in Bristol, VA. Ashburn traffic passes through a 10 Gigabit path and terminates at Point Broadband's Disaster Recovery Point of Presence located in Wytheville, VA. Each of the 10 Gigabit optical paths from Atlanta terminate into an edge routing device.

The 10 Gigabit transport data terminating in Wytheville travels along Point Broadband's Dense wavelength division multiplexing (DWDM) fiber ring. The implementation of the DWDM ring affords Point Broadband the ability to transport high capacity, low latency, protected broadband data amongst 19 different POP locations. The ring allows for the East/West flow of up to 200 Gigabits per second. Customer traffic from Ashburn to Wytheville travels along this ring, finally terminating at Bristol's North POP on another edge routing device. The edge routing devices provide another distinct advantage to customers through the connection of content caching servers implemented from large providers like Google. Caching servers save both Point Broadband and the consumers from having traffic return to their origination points for content. By traffic not having to continuously flow back to the origin it decreases the overall bandwidth required at the origination point (Atlanta or Ashburn).

Point Broadband's protection and redundancy continues as traffic from each edge router flows into one of two Service Router devices. These devices, one located within the Bristol CO, and the other at the North POP are interconnected with each other through a 20 Gigabit Link Aggregation Group (LAG). The multiple chassis along with the LAG (MC-LAG) allow for more efficient use of bandwidth and sub-second failover in case one of the two

chassis were to fail. Each service router uses a physical port or more to feed the customer facing network or Optical Line Termination (OLT).

The OLT is the origination point for the definition of the GPON network as described previously. OLTs much like network switches contain cards with ports; each port represents a PON. 10 Gigabits of available broadband traffic is spread amongst cards containing from four to eight individual PON ports. Point Broadband has chosen to keep the customer per PON ratio in the customer's favor for a 32 to 1 standard. This standard means simply Point Broadband allows up to 32 customers per PON port. This is in direct comparison to the 64 or even 128 to 1 ratio, which reduces the overall bandwidth capabilities to each customer. Traffic flows from these PON ports connecting to a passive optical splitter located close to the customer within a fiber cabinet. Each of the 32 splitter ports connects directly to a customer premise device or Optical Network Terminal (ONT). ONTs are attached directly to the customer's home or business. A single fiber connects to the ONT and from the ONT Category 3, Category 5/6 Ethernet, and even Radio Frequency connections are available. The ONT facilitates the transmission of data into customer's devices such as telephones, computers, routers, and video devices. Each customer can receive up to a 1 Gigabit per second service.

Sources GPON.com. (n.d.). Why GPON. Retrieved from Gigabyte Passive Optical Network (GPON): http://www.gpon.com/why-gpon Zhaoqing, W. (2011). Research on the Application of GPON Technologies. Retrieved 12 13, 2018, from http://ieeexplore.ieee.org/xpl/abstractauthors.jsp?reload=true&arnumber=5957468&punumber=5955409

9. Project Readiness

   Describe the current state of project development, including but not limited to: planning, preliminary engineering, identifying easements/permits, status of MOU or MOA, and final design. Prepare a detailed project timeline or construction schedule, identifying specific tasks, staff, contractor(s) responsible, collection of data, etc., and estimated start and completion dates. Applicants must include Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) between applicants (drafts are allowable). Label Attachments: Attachment 6 – Timeline/Project Management Plan; Attachment 7 – MOU/MOA between Applicant/Co-Applicant.

Answer:

This project is designed to be constructed in 3 phases. Preliminary engineering has been completed for all 3 phases of the project. All poles have been identified and pole permit applications are ready to be submitted upon award for phase 1. The applicant and co-applicant have a draft MOU in place that will be executed upon award. Attachment 7 is attached as the draft MOU. Attachment 6 is the project plan for phase 1. Phase 1 will be primarily in Washington County and will consist of 231 miles of fiber construction and 2,745 passings. Phase 2 will be primarily in Smyth County and will consist of 151 miles of fiber construction and 2,065 passings. Phase 3 will be primarily in Wythe County and will consist of 245 miles of fiber and 1,707 passings.

10. Matching funds: Complete the funding sources table indicating the cash match and in-kind resources from the applicant, co-applicant, and any other partners investing in the proposed project (VATI funding cannot exceed 80 percent of total project cost). In-kind resources include, but are not limited to: grant management, acquisition of rights of way or easements, waiving permit fees, force account labor, etc. Please note the a minimum 20% match is required to be eligible for VATI, the private sector provider must provide 10% of the required match. If the private co-applicant's cash match is below 10% of total project cost, applicants must provide financial details demonstrating appropriate private investment. Label Attachments: Attachment 8 - Funding Sources Table;

Attachment 9 – Documentation of Match Funding.

Answer:

The matching funds of $11,955,033.00 will come from the co-applicant, Point Broadband via private funds [redacted] See Attachments 8 and 9. Point Broadband's balance sheet is provided. Audited financial statements are available if needed but will require a FOIA exemption. The applicant along with leadership from Washington, Smyth and Wythe counties, will provide in kind services relating to grant management, easement acquisition, permit acquisition, digital literacy efforts and local event organization for customer sign up.

11. Leverage: Describe any leverage being provided by the applicant, co-applicant, and partner(s) in support of the proposed project.

Answer:

[redacted] When leveraging the additional project area, the cost is $19,825,033 for 6517 passings, which is $3042.05 per passing. [redacted]

12. Marketing: Describe the broadband adoption plan.

a. Explain how you plan to promote customer take rate, including marketing activities, outreach plan, and other actions to reach the identified serviceable units within the project area. Provide the anticipated take rate and describe the basis for the estimate.

b. Describe any digital literacy efforts to ensure residents and businesses in the proposed project area sufficiently utilize broadband. Please list any partnering organizations for digital literacy, such as the local library or cooperative extension office.

Answer:

Point Broadband's strategic marketing plan is based upon our unique selling proposition of Fiber to the Home. Using this core strategy, we will differentiate our company, products and services significantly enough to achieve and exceed our planned market share. Our objective is to consistently deliver the fastest, most reliable high-speed internet service with best in class customer service as we build and promote our brands as quality based. We aim to gain customers through the strength of our fiber to the premise network and the benefit of doing business with a local company.

Our approach is to completely alter the local landscape of telecommunications services. We are not a cable company or a telephone company. We are a fiber broadband company. We are the "experts" in this industry.

Our goal is to be known as an active local community asset, both commercially and charitably. We achieve this by maintaining a year around awareness of community events in each territory, contributions to specific educational or cultural programs and our own self-promotional events. Realistically, when breakdowns do occur, we will be known as the company who responds with alacrity and integrity, taking responsibility and fixing the problem graciously. It is all about service, and we are specially trained to serve.

Marketing Strategy/Marketing Communications

At Point Broadband, we compete against telecommunications, ISP's and entertainment companies. To win and keep customers we must focus on our distribution channels and service goals. Our most critical tactical tool is our people – they understand that in every interaction they have with the customer, they determine Point Broadband's success. We support them with the following concrete tactical tools.

Digital Advertising:

Point Broadband will optimize its brand presence using digital media, SEO, SEM and Social Media. Strategic email campaigns will be used to target B2B clients and SMS messaging will be used to target residential customers.

Print Advertising

1.Direct Mail: utilizing targeted mailing areas we will utilize direct mail to announce new service areas and special promotions to drive in-bound potential customer activity.
2.Newspaper: Promotion and seasonal driven, Point Broadband supports local direct mail and radio promotions with tactical newspaper ads to enhance the promotion.

Advertising

1.Television: both Point Broadband focused and coop advertising on local broadcast stations as well as cross channel on cable inventory will be used to create awareness and promote offers to drive in-bound activity.

Event Marketing

1.Upon the launch of a particular area Point Broadband will send direct mail to each newly serviceable address inviting the residents to a local community event where they can learn about all products and services provided by Point Broadband and will have the opportunity to order service at that time as well.
2.Community events are key to Point Broadband's success in converting customers and supporting the local community. Each event, both commercial and residential will be staffed with quality brand ambassadors who can answer questions and sign up new customers.
3.B2B events will be scheduled and coordinated with local chambers of commerce, business groups, networking events, industry specific events etc.…
4.Residential Community events will be scheduled and held in centralized area locations such as; Volunteer Fire Departments, Convenience Stores, etc.

Direct Sales

1.Direct sales: Our Door-to-Door sales program is designed to sell based on value and addressing the customer's needs. Upon the launch of a new area, Point Broadband's street force penetrates new build areas and makes in person presentations. Our Business Account executives focus on high value commercial & enterprise customers with strong revenue potential with long term relationships.

Digital Literacy Efforts

Point Broadband is committed to promoting and marketing digital literacy programs provided by the Applicant and the counties. DLP options may include County Library online programs, agricultural-based DLP education from the county's Agricultural Cooperative Extension office and DLP courses offered through the public school systems in each county.

Anticipated Take Rate

Point Broadband has built their financial model based on a 60% take rate over a 36-month period post construction. This is based on our tracking of sign ups in rural projects with similar demographics in the past 2 years. We completed the Treadway project in 2019 in rural Tennessee. There were 1046 total passings and we have 685 total customers in the project cabinets as of 7/1/2020 (65%). Our Cove Creek project in Tazewell County, VA, was completed in May 2020 and added 155 new passings. We have 68 customers there as of 7/1/2020, (43%), in less than 100 days post construction.

13. Project Management: Identify key individuals who will be responsible for the management of the project and provide a brief description of their role and responsibilities for the project. Present this information in table format. Provide a brief description of the applicant and co-applicant's history and experience with managing grants and constructing broadband communication facilities. Please attach any letters of support from stakeholders. If applicant is not a locality(s) in which the project will occur, please provide a letter of support from that locality. Attachment 10 – Letters of Support.

Answer:

Name	Title & Organization	Duties/Responsibilities	Background
Aaron Sizemore	Executive Director – Mount Rogers PDC	All Applicant activities and coordinating leverage assistance including but not limited to community promotion, mapping, permitting and digital literacy campaigns.	16 years of experience in project management and collaboration with funders such as Department of Housing and Community Development, Tobacco Commission, Virginia Department of Transportation, Economic Development Administration, Appalachian Regional Commission, and USDA Rural Development.
Joseph Puckett	General Manager – Point Broadband	Overall project deliverable for the co-applicant. Grant reimbursement, tracking and reporting.	10 years of management across multiple industries, including 3 years of leadership in the telecommunications industry in this market.
Noah Maden	Senior Operations Manager – Point Broadband	All construction, splicing and installation activities for the project.	15 years of operations experience in the telecommunications industry.
Mark Alldredge	Director of OSP Engineering – Point	All engineering, final design and permitting for the project.	25 years of engineering and design experience in the telecommunications industry.

	Broadband		
Tim Nutter	Construction Supervisor – Point Broadband	All construction activities including but not limited to project schedule, planning and execution.	16 years of construction management experience in the telecommunications industry.
Taylor Nipper	VP of Marketing – Point Broadband	All marketing activities associated with customer acquisition.	25 years of marketing and sales experience in the telecommunications industry.

14. Project Budget and Cost Appropriateness

    Budget: Applicants must provide a detailed budget that outlines how the grant funds will be utilized, including an itemization of equipment, construction costs, and a justification of proposed expenses. If designating more than one service area in a single application, each service area must have delineated budget information. For wireless projects, please include delineated budget information by each tower. Expenses should be substantiated by clear cost estimates. Include copies of vendor quotes or documented cost estimates supporting the proposed budget. Label Attachments: Attachment 11 – Derivation of Costs; Attachment 12 - Documentation of Supporting Cost Estimates.

Answer:

Point Broadband has completed a detailed cost estimate based on preliminary engineering and design. The cost estimate is based on the data in Attachment 12 and Attachments 11 is based on that cost estimate.

15. The cost benefit index is comprised of three factors: (i) state share for the total project cost, (ii) state cost per unit passed, and (iii) the internet speed. From these statistics, individual cost benefit scores are calculated and averaged together to create a point scale for a composite score. Provide the following:

    a. Total VATI funding request
    b. Number of serviceable units
    c. Highest residential speed available in proposed project area

Answer:

Total VATI Funding Request	$7,870,000
Number of Serviceable Units	6519
Highest Residential speed available in proposed Project area	1000 Mbps x 500 Mbps

16. Commonwealth Priorities

Additional points will be awarded to proposed projects that reflect Commonwealth priorities. If applicable, describe the following:

a. How the proposed project fits into a larger plan to achieve universal broadband coverage for the locality. Explain the remaining areas of need in the locality and a brief description of the plan to achieve universal broadband coverage.

b. Businesses, community anchors, or other passings in the proposed project area that will have a significant impact on the locality or region because of access to broadband.

c. Unique partnerships involved in the proposed project. Examples include electric utilities, universities, and federal/state agencies.

d. Digital equity efforts to ensure low to moderate income households in the proposed project area will have affordable access to speeds at or above 25/3 mbps.

Answer:

A.The universal coverage plan is to first address the un/underserved areas and then to proceed to areas lacking adequate service and address through public-private partnerships. The volume of passings made achievable in the counties moves them each closer to universal coverage. This project addresses communities south of I-81 and the service area was chosen based upon studies conducted in each locality. Attachment 14 is a Telecommunications Needs Assessment for the project area. Smyth County has recently completed a CIT assessment of the under and unserved areas. The project area addresses all or parts of 3 priority areas identified in the Telecommunications Needs Assessment: Sugar Grove, Damascus, and the western portion of the Austinville/Ivanhoe area.

Remaining areas:
Washington County: Mendota, Hayters Gap and rural areas of Glade Spring (including areas around the North Fork and Saltville)
Smyth County : Broadford north to Wythe, Saltville, Allison Gap, Middle Fork and North Fork areas, Nebo, Stoney Battery and Atkins, as well as all other unserved/unserved areas as defined by the Comprehensive Broadband Plan currently in process
Wythe County: Castleton Road, Blacklick, and eastern Austinville

The localities' awareness of internet accessibility challenges in and around the growth of ecotourism provide potential to precipitate future economic and community revitalization of small communities, and drive concurrent growth and demand for residential, business, and visitor internet connectivity. The proposed service area is rural and primarily residential, but includes community centers, public library branches, and other essential community facilities. A lack of density for non-home-based businesses is a challenging scenario for seeking external funding opportunities to service this geography; however, residential need remains prominent and is especially important for households with school-age children.

Many of the unserved geographies exhibit rural characteristics, and the strong majority of passings would be residential. Internet accessibility to households with school-age children and agricultural operations will also be important considerations for future planning and strategies to enhance services to residents of these communities.

B.Businesses, Anchor Institutions and others were identified in the passings form.
There were at least 345 Businesses, Anchor Institutions and others were identified in the passings form. This was a combination of field audit, online review, and review with local leaders. There were 25 community anchors that will receive free data service for at least 1 year, as well as numerous places of worship that also often serve as community shelters in times of disaster. We identified 134 businesses and at least 118 home-based businesses. Lack of access to broadband often is the prohibiting factor to a home-based business, as well as working from home. Also, Attachment 3 includes documentation of the need for Tele-med and Tele-education services, and how critical broadband access is to both.

Student and residential household internet accessibility is essential to school district ability to support virtual instruction and content delivery; without widespread high-speed residential internet infrastructure availability many students face significant barriers to overall academic success.

Broadband service is essential for public safety agencies. There are many public safety facilities located within the proposed project service area, including, but not limited to, substations, water/wastewater infrastructure, fire and EMS, and solid waste convenience stations.

At present, Smyth, Washington, and Wythe Counties do not require a business license nor levy BPOL taxes, thereby creating a challenge for accurate assessment of the number of home-based businesses located within the project service area. A driving tour of the proposed project service area, combined with a ‘google’ business search, served as a basis for the estimated number of home-based businesses. Agricultural, particularly cattle and livestock operations, are widely present across the proposed project area and rely on internet connectivity for e-commerce and operational support.

C.Point Broadband has submitted the project map to AEP for consideration for their second project in the pilot program created by HB 2691. [redacted]

D.Point Broadband offers our lifeline data package at 25/5 for $54.95 and will offer a year of free data service to community centers in the project and first responders in the project. We also have a discount program for faith-based organizations within the project. Point Broadband will also provide at least one free wifi hotspot within each county in the project area. The location will be chosen in partnership with MRPDC with input from each county administrator.

17. Additional Information

17. Provide any other information that the applicant desires to include. Applicants are limited to four additional attachments.

Label Additional Attachments as:
a. Attachment 13 – Two most recent Form 477 submitted to the FCC or equivalent
b. Attachment 14 – XXXXXXX
c. Attachment 15 – XXXXXXX
d. Attachment 16 – XXXXXXX
e. Attachment 17 – XXXXXXX

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Answer:

Attachment 13 – Two most recent Form 477 submitted to the FCC or equivalent
Attachment 14 – SWVA Broadband Study and Plan
Attachment 15 – Point Broadband Grant Experience
Attachment 16 – Map Showing Construction Phases
Attachment 17 – Smyth County Analysis of Broadband Survey

Attachments:

Map(s) of project area, including proposed infrastructure

01MRAreaMapsreduced8172020111220.pdf

Documentation of Federal Funding (CAF/ACAM/USDA, etc…) in and/or near proposed project area.

02DocumentationofFederalFundingRDOFmap813202054948.pdf

Documentation that proposed project area is unserved based on VATI criteria

03DocumentationthatproposedareaisunservedbasedonVATIcriteria8172020100739.pdf

Passings Form (Please use template provided)

04PassingsForm817202053440.pdf

Timeline/Project Management Plan

06TimelineProjectManagementPlan813202055043.pdf

MOU/MOA between applicant/co-applicant (can be in draft form)

07MemorandumofUnderstandingMountRogersPBBFH820208172020101849.pdf

Funding Sources Table

08VATIFundingSourcesTable813202055116.pdf

Documentation for match funding

09Documentationformatchingfunding817202040742.pdf

Application to DHCD Submitted through CAMS

Mount Rogers Planning District Commission

MRPDC Regional Broadband

Letters of Support

10LettersofSupportreduced817202042305.pdf

Derivation of Cost (Project Budget)

11DerivationofCostProjectBudget817202032557.pdf

Documentation supporting project costs (e.g. vendor quotes)

12VendorQuotes813202055215.pdf

Two most recent Form 477 submitted to FCC

13477Filings813202055245.pdf

Optional

14CommonwealthPrioritiesSWVABroadbandStudyandPlan813202055326.pdf

Optional

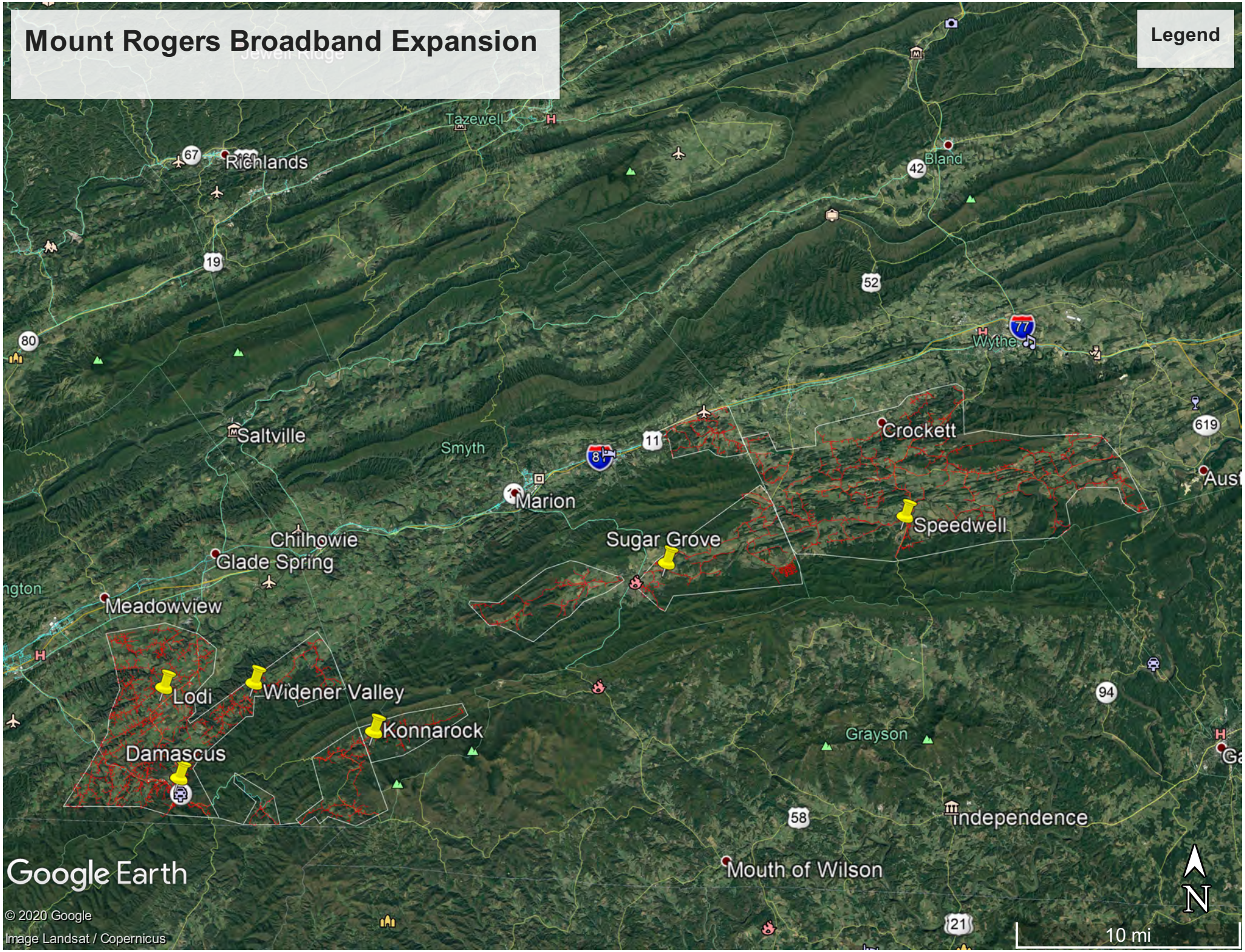
15PointBroadbandGrantExperience813202055413.pdf

Optional

16MapshowingConstructionphases8172020103016.jpg

Optional

17SmythCountyAnalysisofBroadbandSurveyComments8172020103023.pdf


Mount Rogers Broadband Expansion
Legend
Tazewell
Richlands
Bland
Wythe
Saltville
Smyth
Marion
Crockett
Speedwell
Sugar Grove
Chilhowie
Glade Spring
Meadowview
Lodi
Widener Valley
Konnarock
Damascus
Grayson
Independence
Mouth of Wilson
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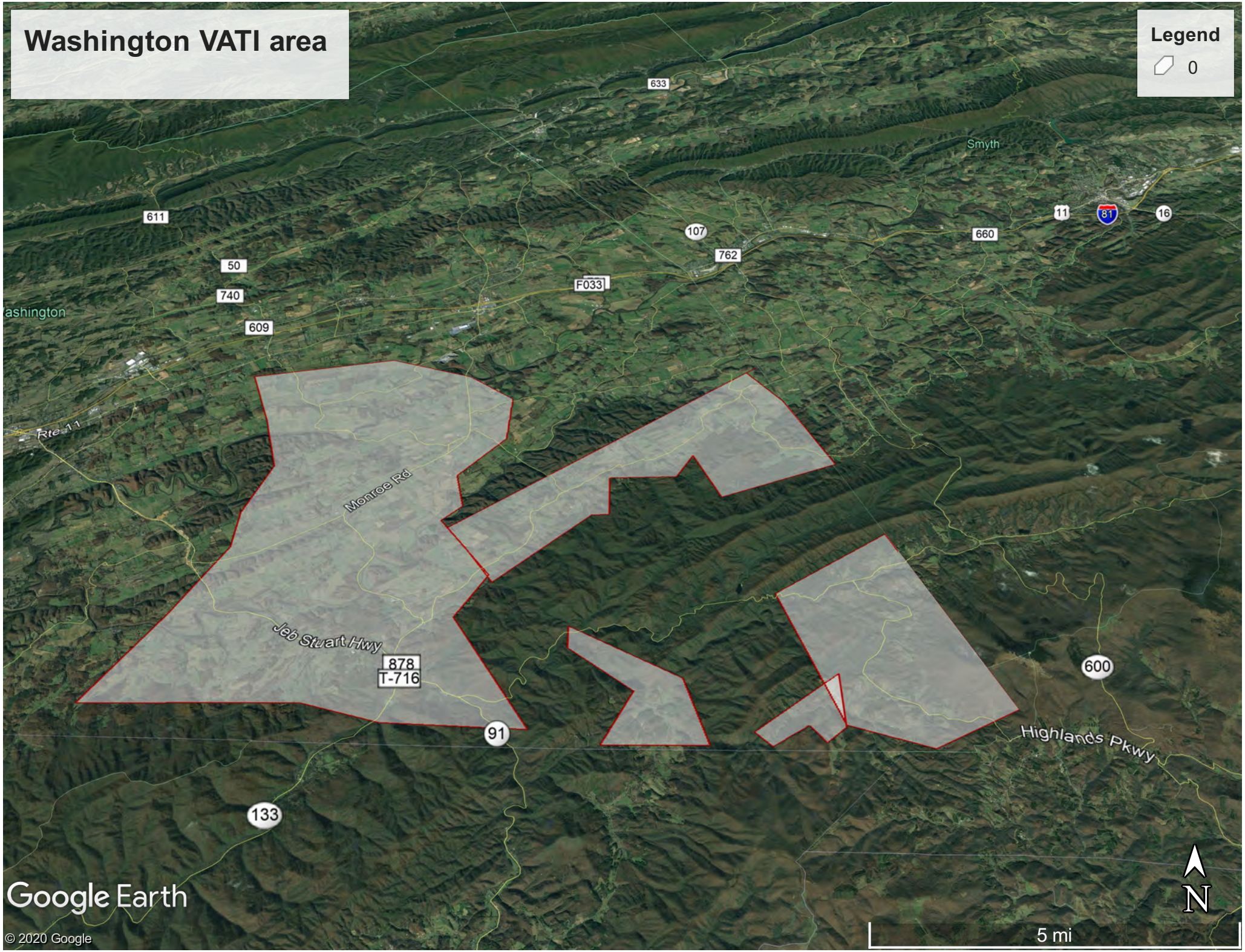
Washington VATI area
Legend
0
633
Smyth
611
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16
107
660
762
50
F033
740
609
Rte 11
Monroe Rd
Jeb Stuart Hwy
878
T-716
91
600
Highlands Pkwy
133
Google Earth
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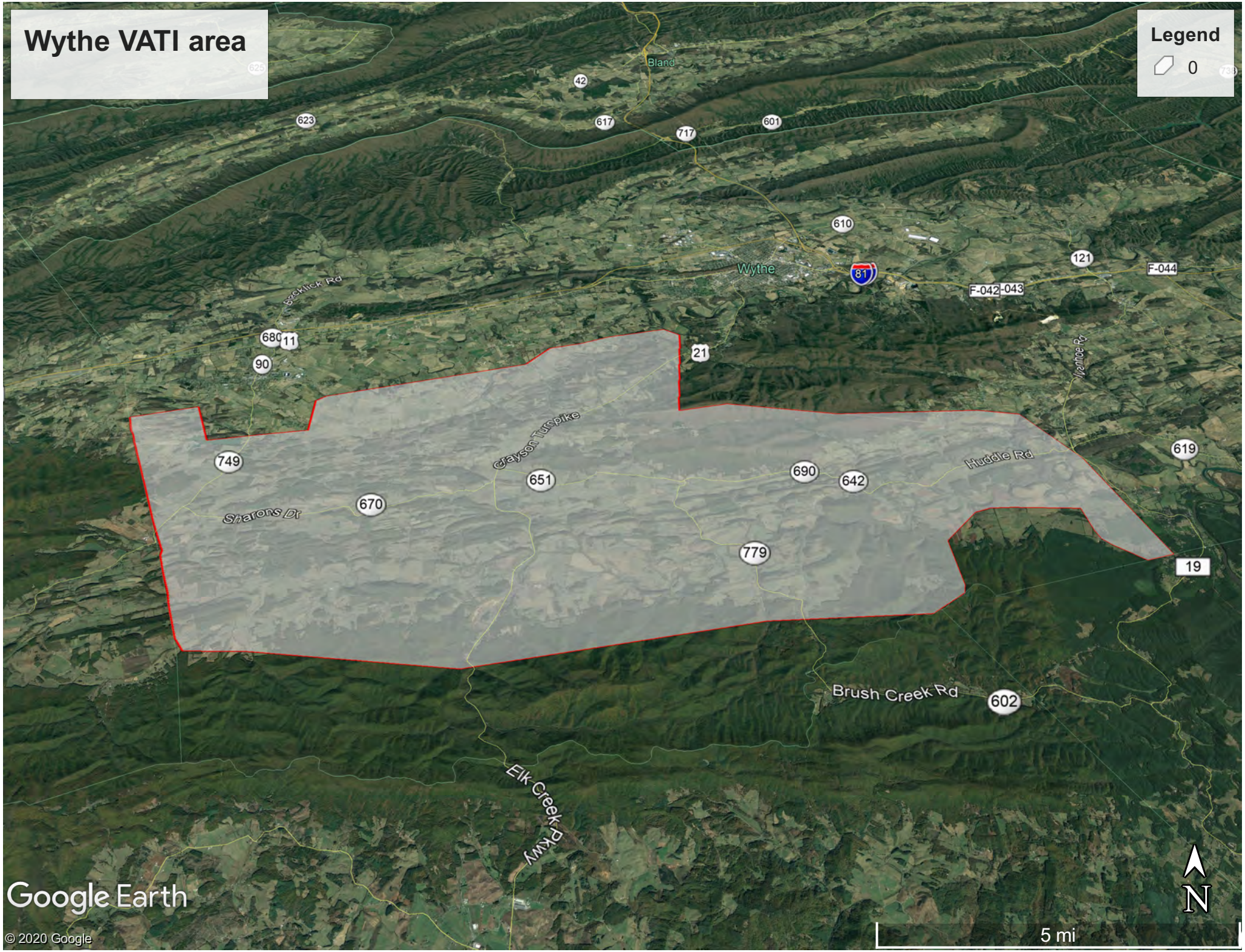
N
5 mi

Smyth County - Broadband Availability

Groseclose
Brushy Mountain
Wassum Valley
Hungry Mother Lake
Atkins
River
Holston
Marion
Middle
Fork
Seven Mile Ford
Seven Mile Ford
81
Glade Mountain
Cedar Springs
Adwolfe
Forest
Summit
Sugar Grove
Teas
River
Camp
Quebec
Holston
Fork
South
Iron Mountains
16
Iron Mountains
Straight Mountain
Grave Mountain
Iron Mountains
GRAYSON COUNTY
Konnarock
58
0 0.5 1 2 Miles
Smyth County GIS 2020
KMZ Areas


Wythe VATI area
Legend
0
Bland
42
623
617
717
601
610
Wythe
81
121
F-044
F-042
043
Bucklick Rd
680
11
90
21
Wythe Rd
Grayson Turnpike
749
651
690
642
Huddle Rd
619
Sharons Dr
670
779
19
Brush Creek Rd
602
Elk Creek Pkwy
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N
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Integrated Broadband Planning

broadband.cgit.vt.edu/IntegratedToolbox/

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VIRGINIA TECH

Virginia Broadband Availability Map and Integrated Broadband Planning and Analysis Toolbox

CGIT
Center for Geospatial Information Technology

VITA

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ON

Coverage Query Results

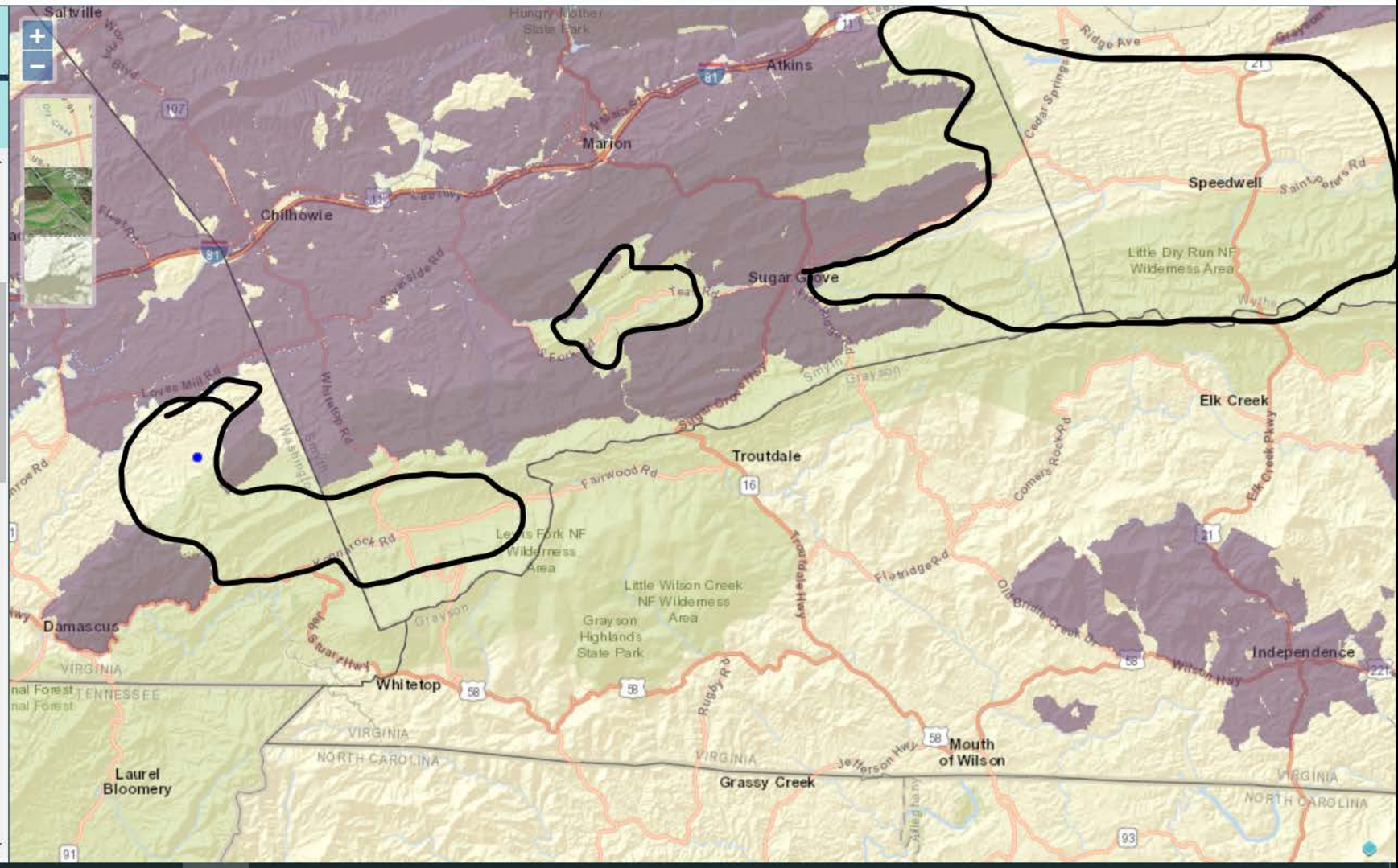
Provider	Technology	Consumer Upload Speed	Consumer Download Speed	Business Upload Speed	Business Download Speed
OPTINET	Fiber	50 Mbps	1000 Mbps	1000 Mbps	1000 Mbps

Va. Funding Query Results

County	Partner	Year	Award Amount	Units Contracted to Pass	Funding Program
No results found					

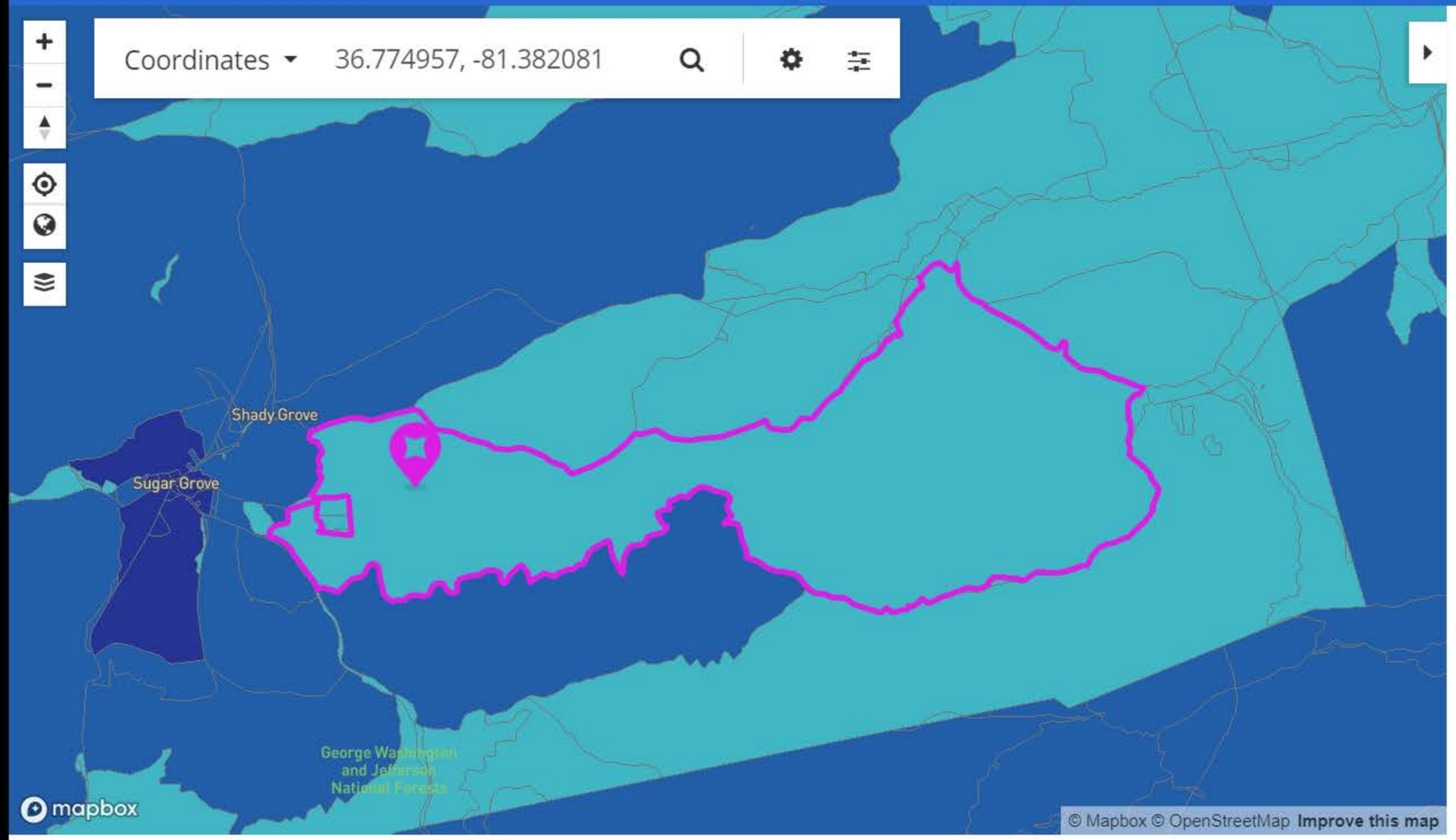
Choose Some Layers

- [x] Cities/Counties
- [x] Cable Wireline Coverage (Dec. 2018)
- [ ] DSL/Copper Coverage (Dec. 2018)
- [ ] Fiber Optic Coverage (Dec. 2018)
- [ ] Fixed Wireless Coverage (Dec. 2018)
- [ ] Mobile Wireless Coverage (Dec. 2018)
- [ ] 4G/LTE Wireless Coverage (Dec. 2018)
- [ ] Satellite Coverage (Dec. 2018)



Federal Communications Commission

Fixed Broadband Deployment



All Providers Reporting Service

Census block ID: 511730305002013

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	35	3
CenturyLink, Inc.	ADSL	25	2
Hughes Network Systems, LLC	Satellite	25	3
Telephone and Data Systems, Inc.	Fixed Wireless	2	2
VSAT Systems, LLC	Satellite	2	1.3

broadbandmap.fcc.gov/#/location-summary?version=jun2019&lat=36.804813&lon=-81.262853&tech=acfosw&speed=25_3&vlat=36.8004933784401941&vlon=-81.264463131140768vzoom=11....

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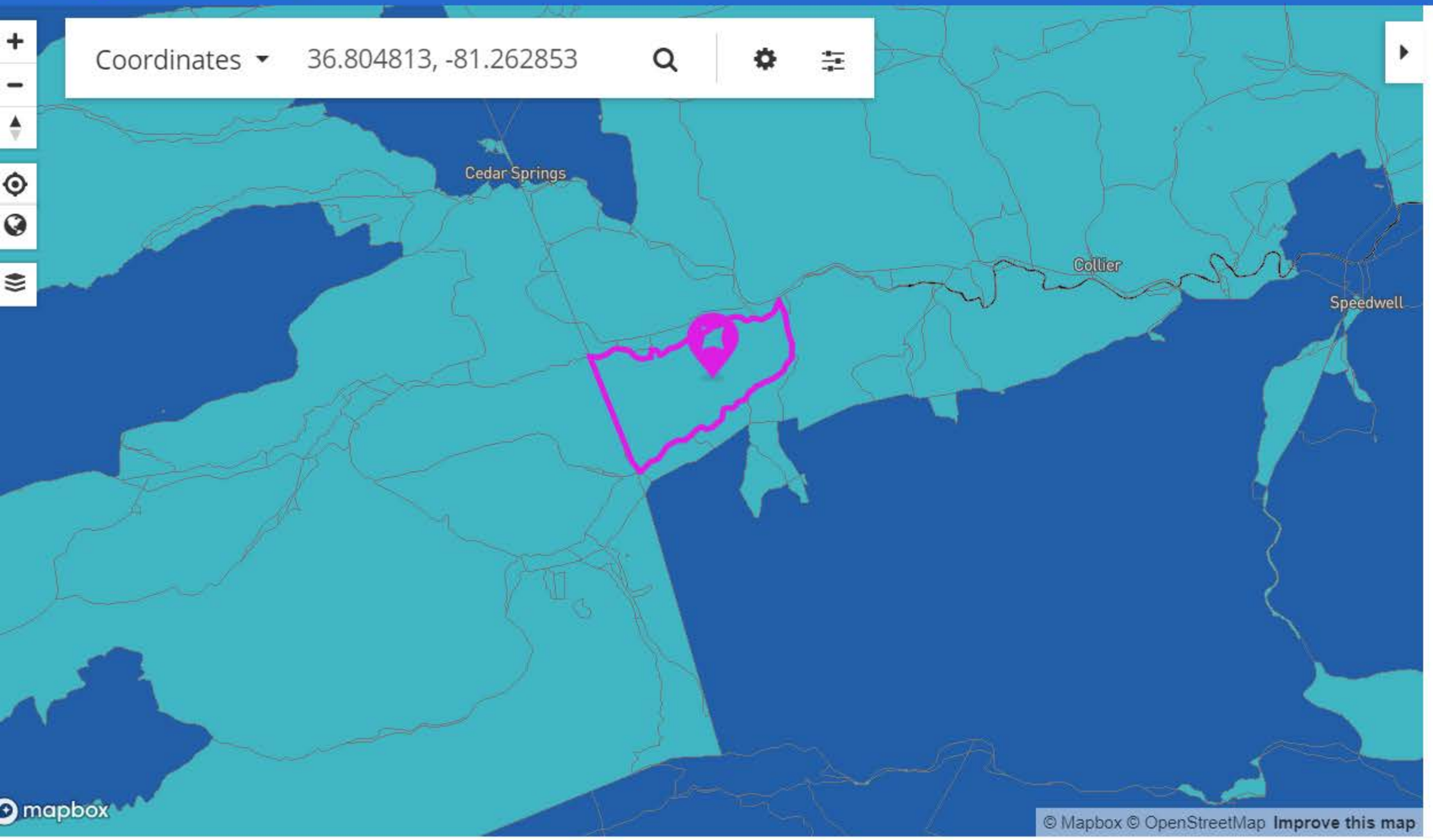
Fixed Broadband Deployment



All Providers Reporting Service

Census block ID: 511970503021201

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	100	3
Hughes Network Systems, LLC	Satellite	25	3
CenturyLink, Inc.	ADSL	3	0.512
VSAT Systems, LLC	Satellite	2	1.3

broadbandmap.fcc.gov/#/location-summary?version=jun2019&lat=36.804963&lon=-81.191900&tech=acfosw&speed=25_3&vlat=36.782463646498l9&vlon=-81.26681459795151&vzoom=11.0...

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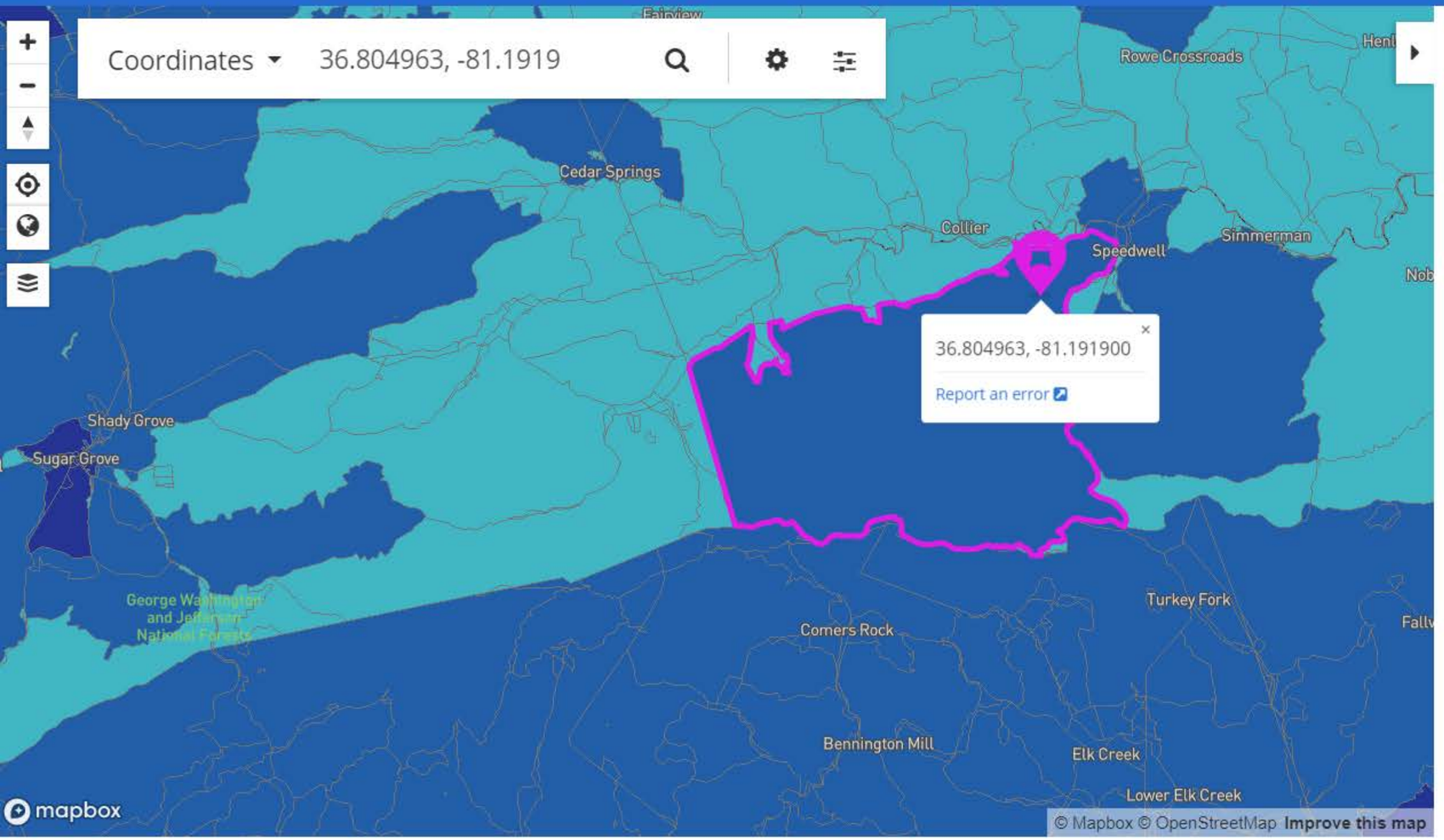
Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 511970503021158

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	100	3
CenturyLink, Inc.	ADSL	60	5
Hughes Network Systems, LLC	Satellite	25	3
Telephone and Data Systems, Inc.	Fixed Wireless	2	2
VSAT Systems, LLC	Satellite	2	1.3

broadbandmap.fcc.gov/#/location-summary?version=jun2019&lat=36.686258&lon=-81.732120&tech=acfosw&speed=25_3&vlat=36.69001062147542&vlon=-81.71722265914099&vzoom=11.7...

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Fixed Broadband Deployment

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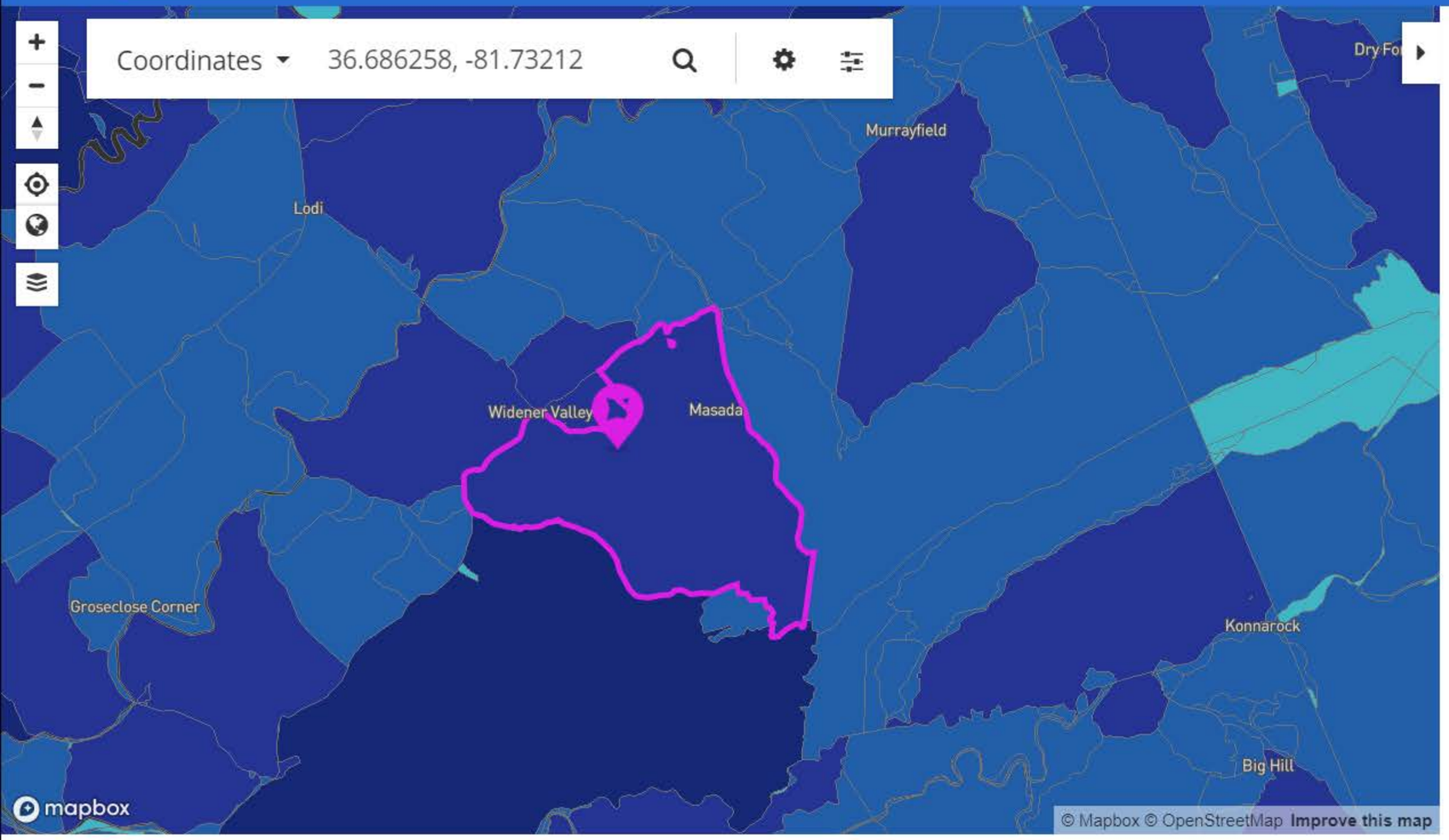

All Providers Reporting Service

Census block ID: 511910108002170

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
Sunset Digital Communications, Inc./Sunset Fiber, LLC	Fiber	1000	50
CenturyLink, Inc.	ADSL	60	5
ViaSat, Inc.	Satellite	35	3
Hughes Network Systems, LLC	Satellite	25	3
CenturyLink, Inc.	ADSL	10	0.768

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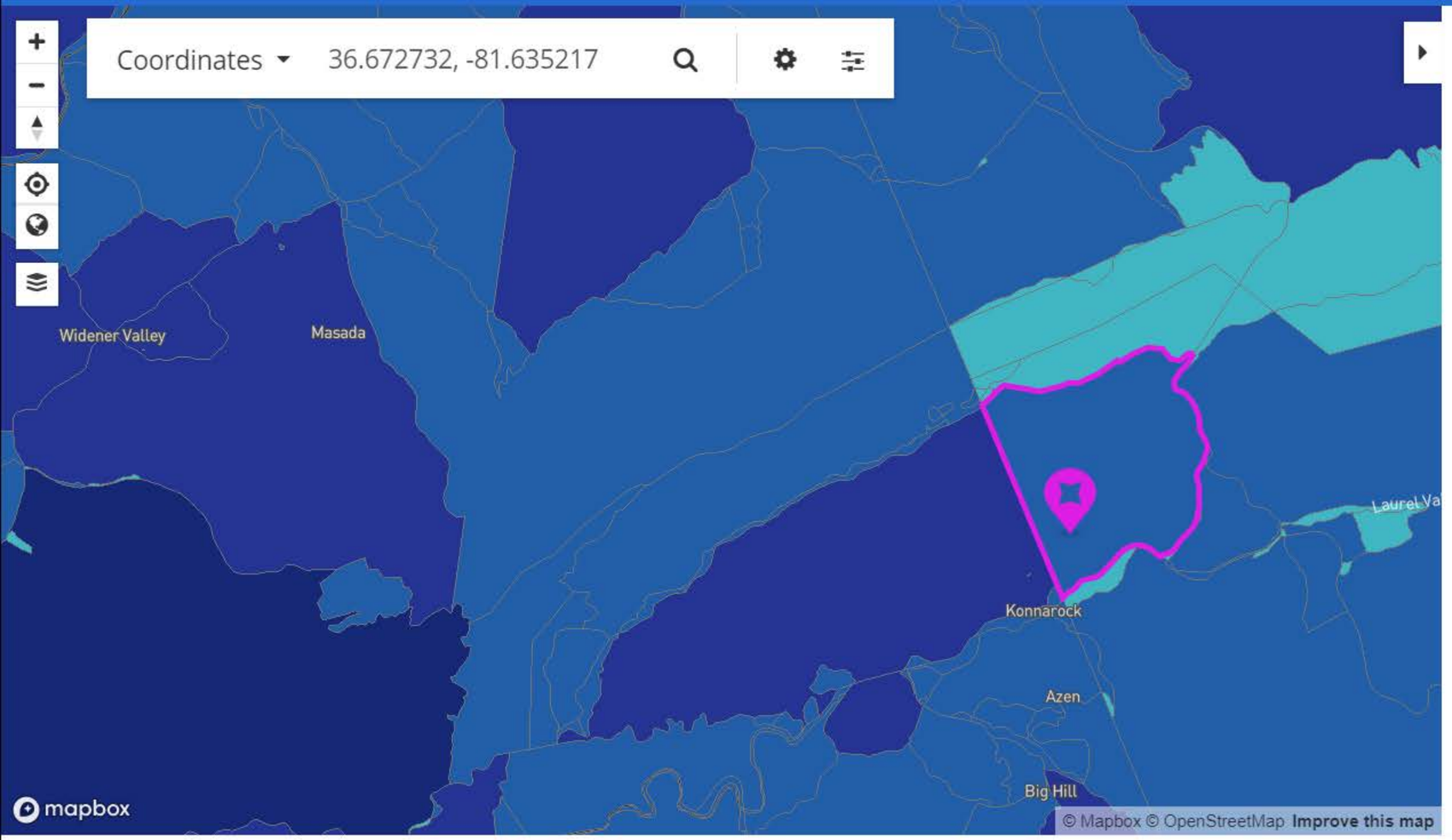
Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 511730307023081

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

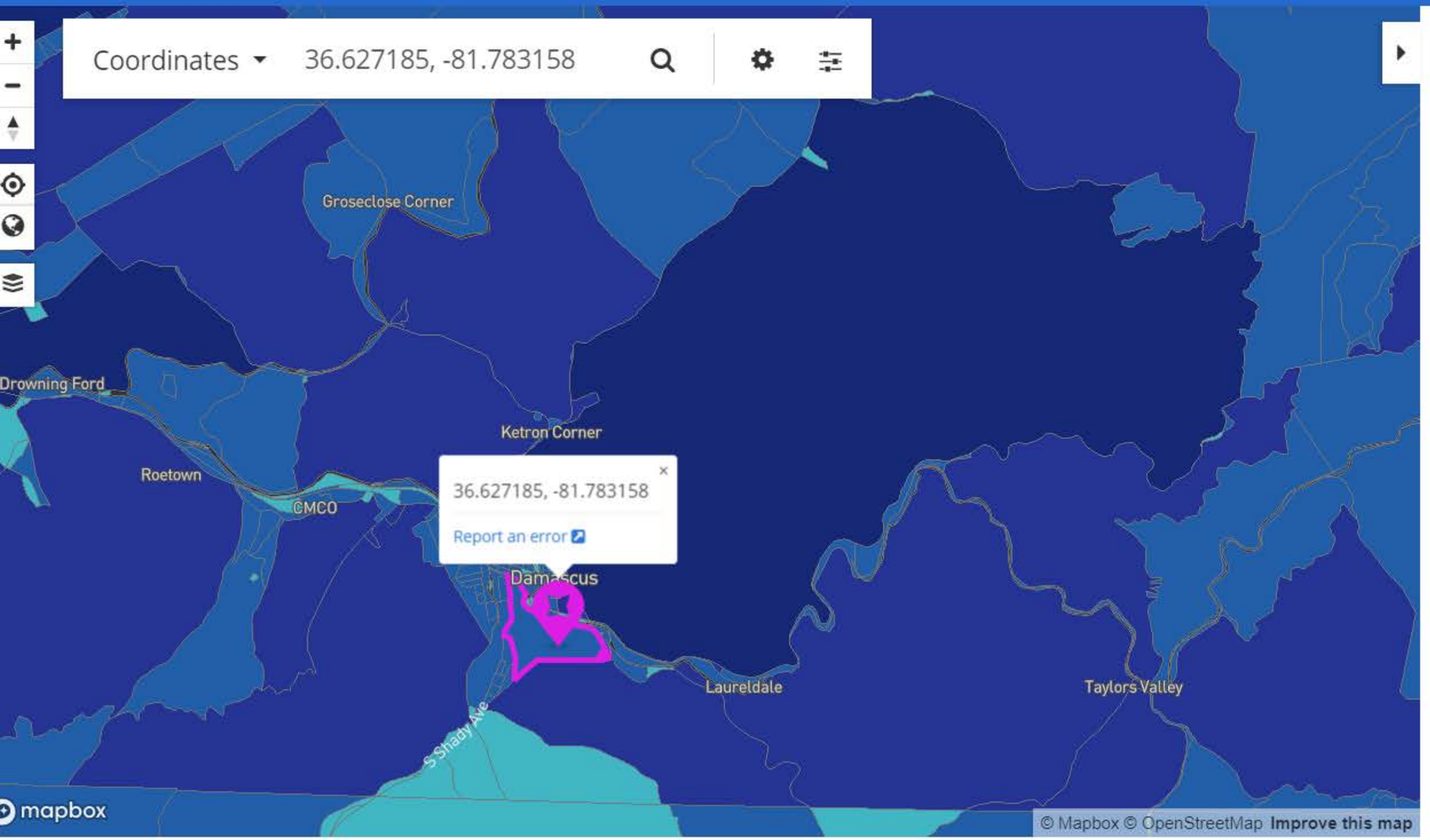
Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
CenturyLink, Inc.	ADSL	60	5
ViaSat, Inc.	Satellite	35	3
Hughes Network Systems, LLC	Satellite	25	3
VSAT Systems, LLC	Satellite	2	1.3

broadbandmap.fcc.gov/#/location-summary?version=jun2019&lat=36.627185&lon=-81.783158&tech=acfosw&speed=25_3&vlat=36.64803724511149&vlon=-81.76720646904585&vzoom=12.0...

Federal Communications Commission

Fixed Broadband Deployment



All Providers Reporting Service

Census block ID: 511910109003079

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
Sunset Digital Communications, Inc./Sunset Fiber, LLC	Fiber	1000	50
ViaSat, Inc.	Satellite	35	3
CenturyLink, Inc.	ADSL	25	2
Hughes Network Systems, LLC	Satellite	25	3
iGo Technology, Inc.	Fixed Wireless	20	2

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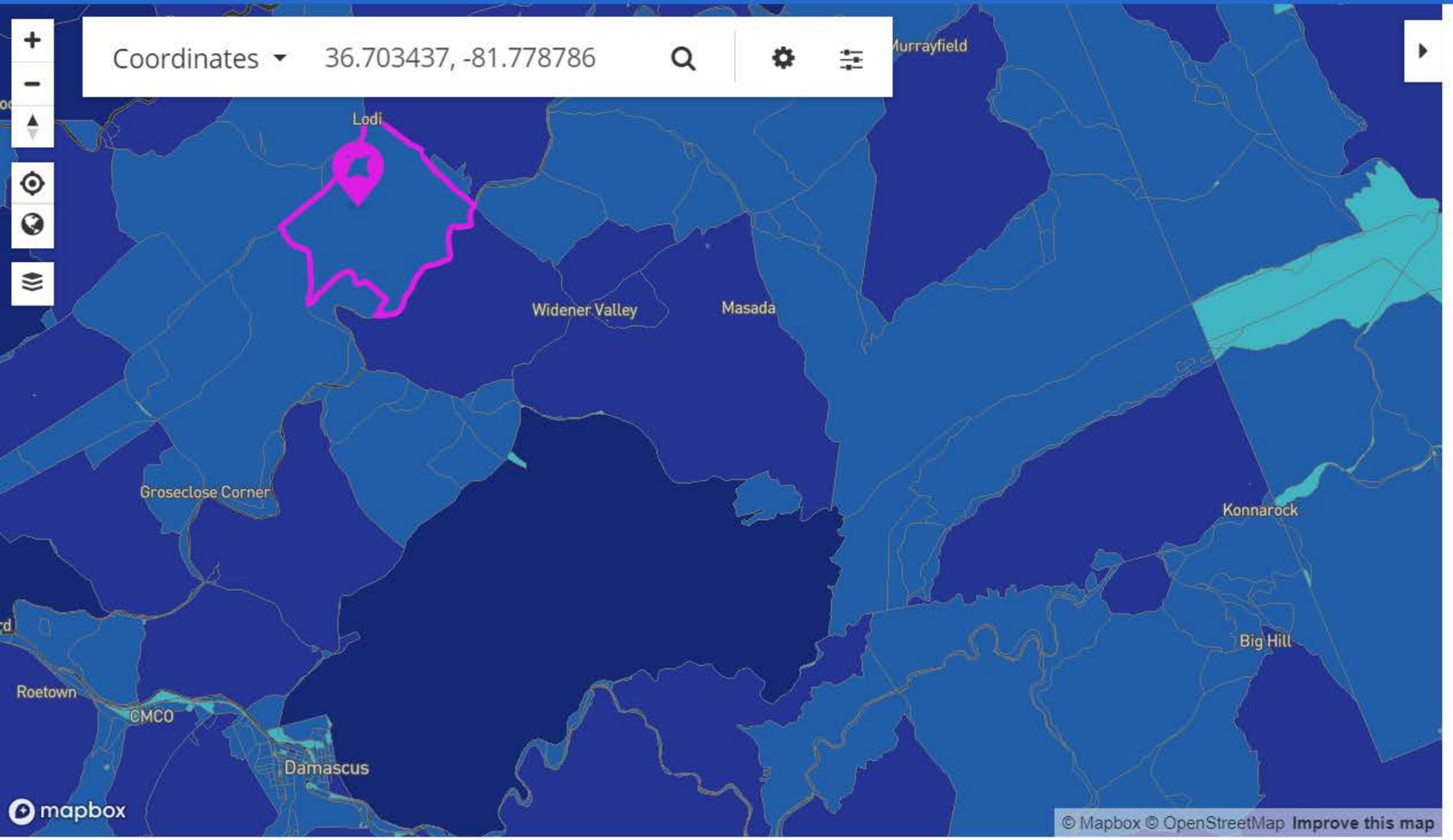

All Providers Reporting Service

Census block ID: 511910108001069

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
Sunset Digital Communications, Inc./Sunset Fiber, LLC	Fiber	1000	50
ViaSat, Inc.	Satellite	35	3
Hughes Network Systems, LLC	Satellite	25	3
CenturyLink, Inc.	ADSL	3	0.512
VSAT Systems, LLC	Satellite	2	1.3

broadbandmap.fcc.gov/#/location-summary?version=jun2019&lat=36.766423&lon=-81.457789&tech=acfosw&speed=25_3&vlat=36.76586976647688&vlon=-81.46136941316928&vzoom=12.4...

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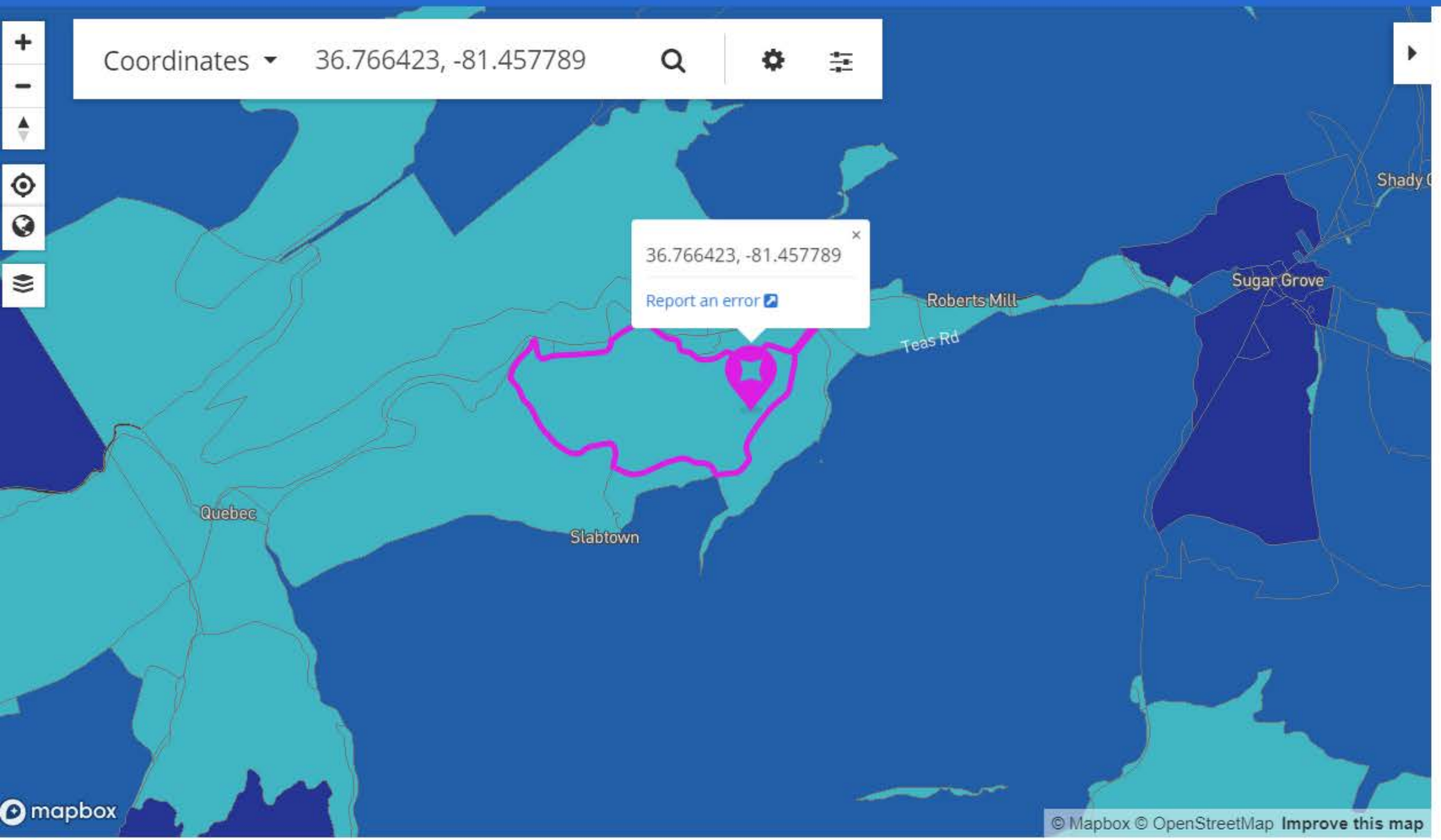
Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 511730305002108

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	35	3
Hughes Network Systems, LLC	Satellite	25	3
Telephone and Data Systems, Inc.	Fixed Wireless	2	2
VSAT Systems, LLC	Satellite	2	1.3
CenturyLink, Inc.	ADSL	1.5	0.512

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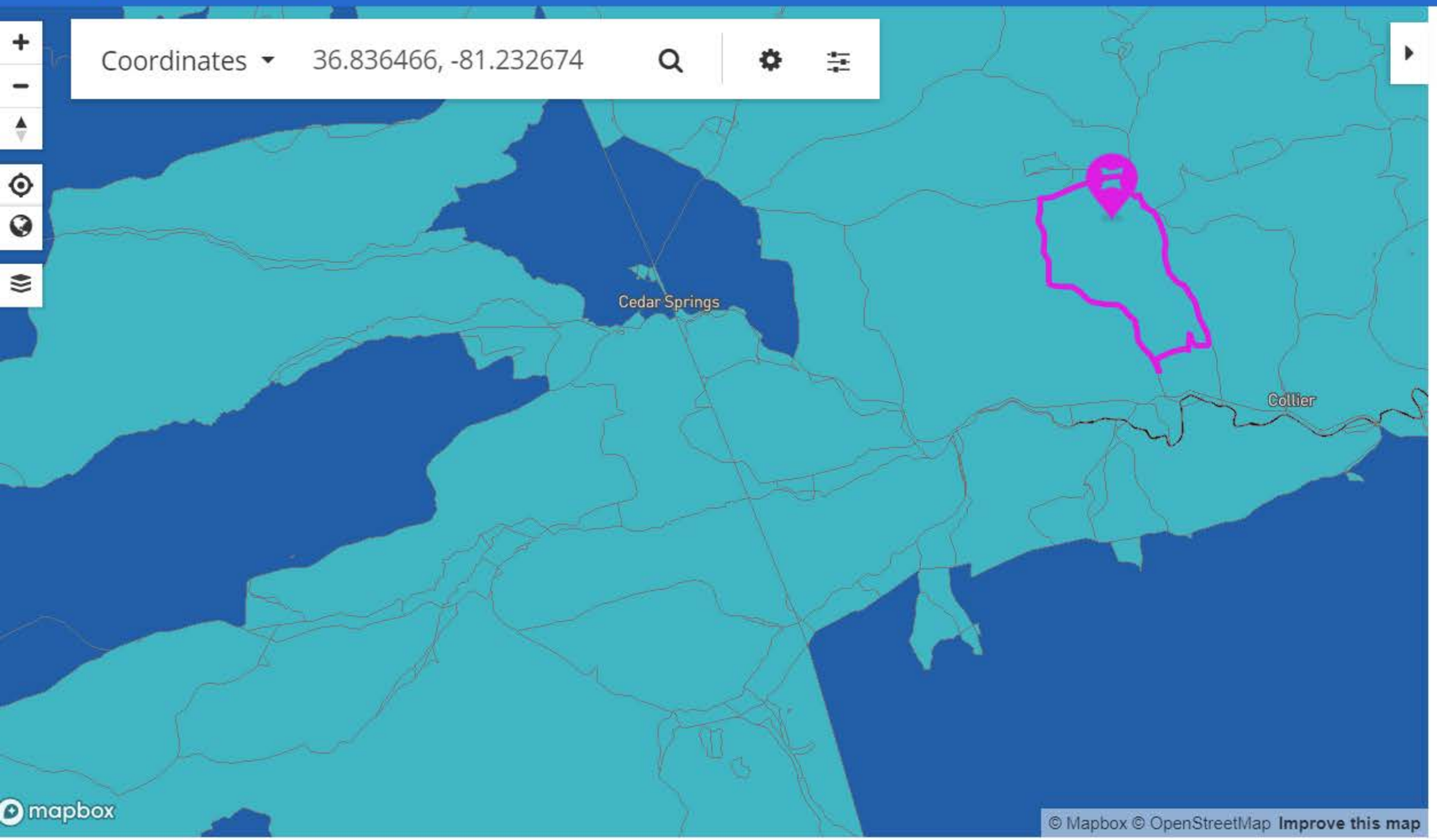

All Providers Reporting Service

Census block ID: 511970503021089

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	100	3
Hughes Network Systems, LLC	Satellite	25	3
VSAT Systems, LLC	Satellite	2	1.3
CenturyLink, Inc.	ADSL	1.5	0.512

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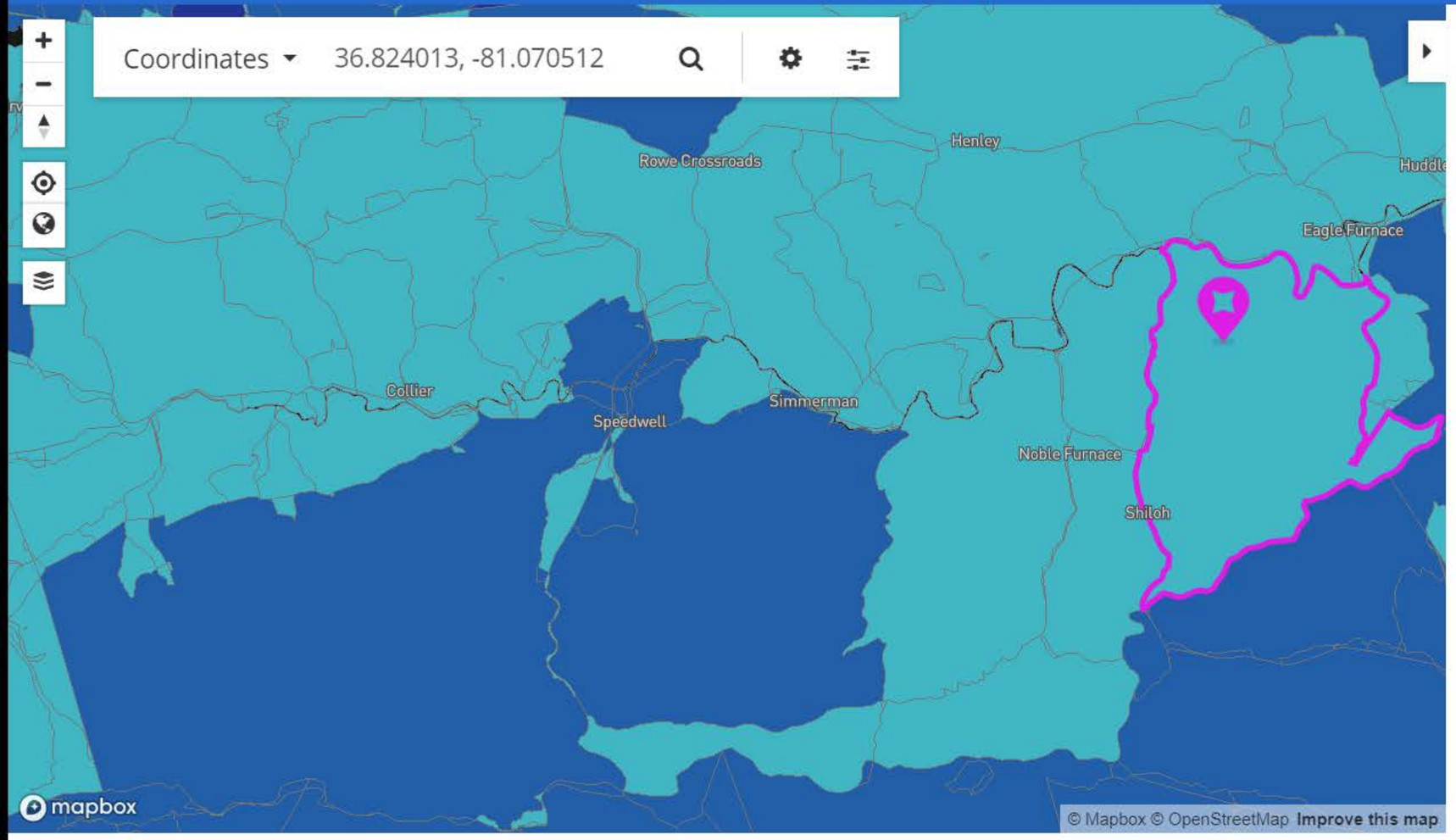
Federal Communications Commission

Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 511970504013107

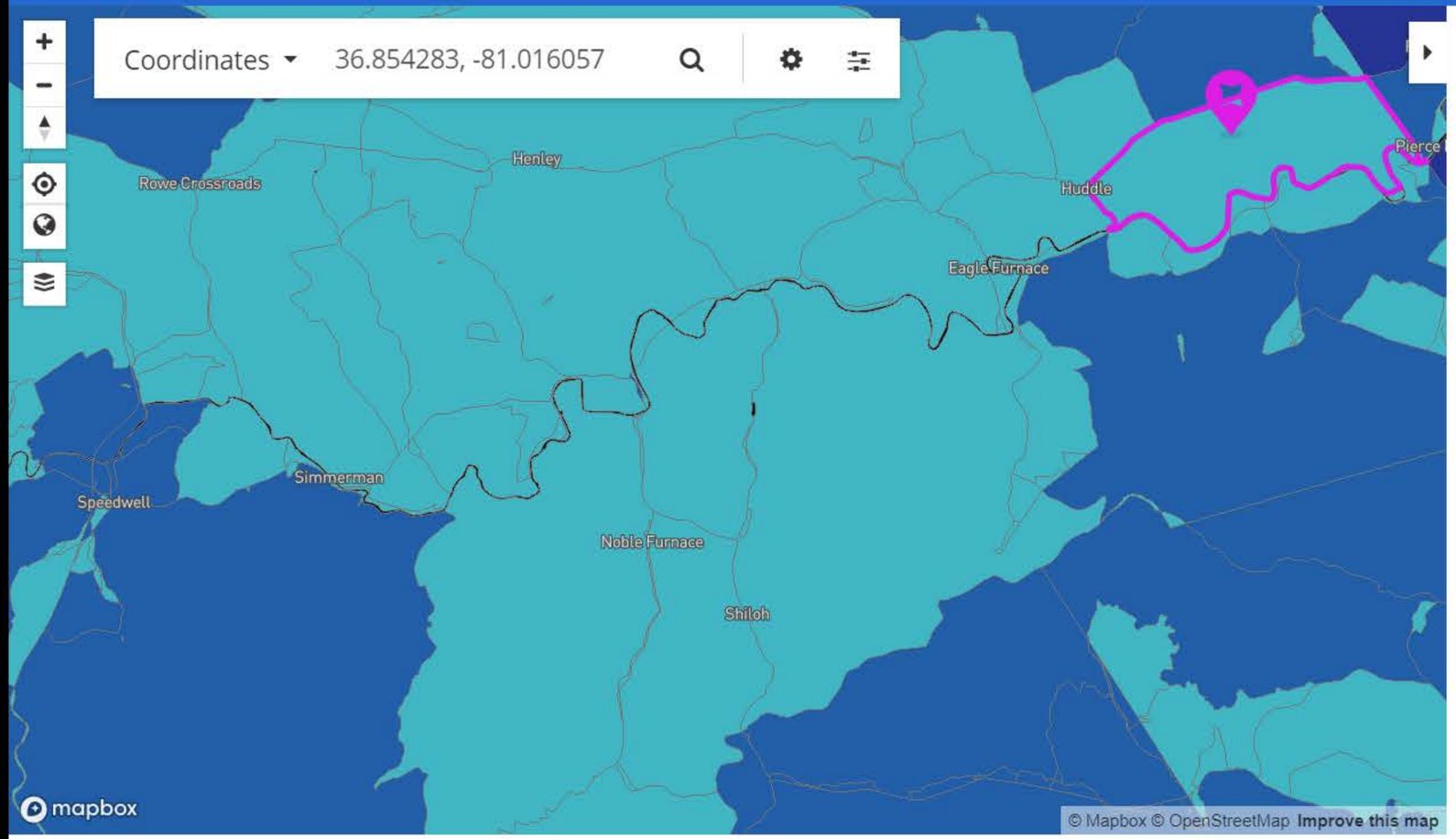
Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	100	3
Hughes Network Systems, LLC	Satellite	25	3
CenturyLink, Inc.	ADSL	10	1
MGW Communications, Inc.	Fixed Wireless	10	1
Telephone and Data Systems, Inc.	Fixed Wireless	2	2
VSAT Systems, LLC	Satellite	2	1.3



All Providers Reporting Service

Census block ID: 511970504013015

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2019 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
ViaSat, Inc.	Satellite	100	3
Hughes Network Systems, LLC	Satellite	25	3
CenturyLink, Inc.	ADSL	15	0.768
Virginia Everywhere, LLC	Fixed Wireless	15	3
MGW Communications, Inc.	Fixed Wireless	10	1
Telephone and Data	Fixed	2	2

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Imagery Date: 10/23/2019 36°45'44.30" N 81°25'19.77" W elev 0 ft eye alt 51.24 mi

Widener's Garage - Google Maps

google.com/maps/place/Widener's+Garage/@36.6527695,-81.7861711,1035m/data=!3m1!1e3!4m5!3m4!1s0x88504117f1e94fe7:0xa89caaf3e5197338!8m2!3d36.6532478!4d-81.7810839?hl=...

Widener's Garage

Widener's Garage

5.0 ★★★★★ (2)

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Larkspur Ln
Wright Branch
Monroe Rd
Brittany Ln
Golfers Dr
Sunset Memorial Park

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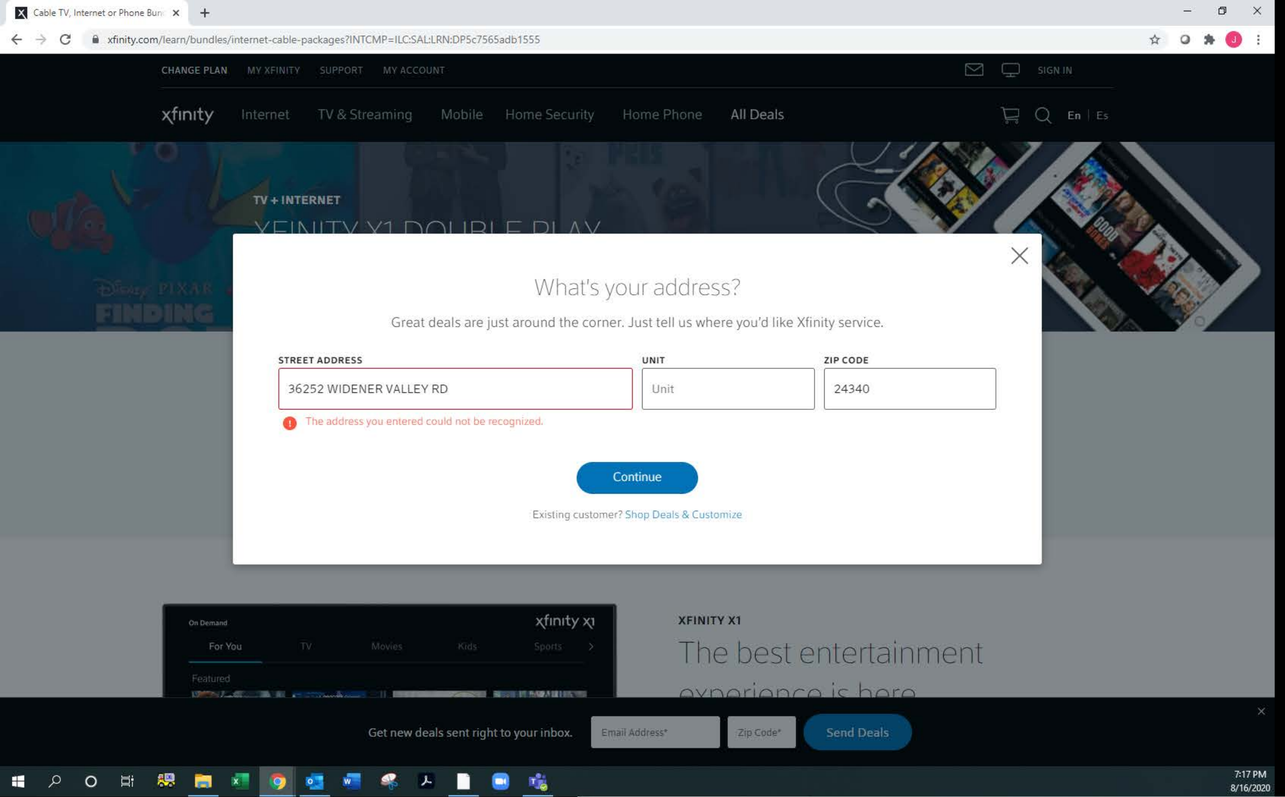
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ZIP CODE
24340
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XFINITY X1
The best entertainment
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Email Address*
Zip Code*
Send Deals
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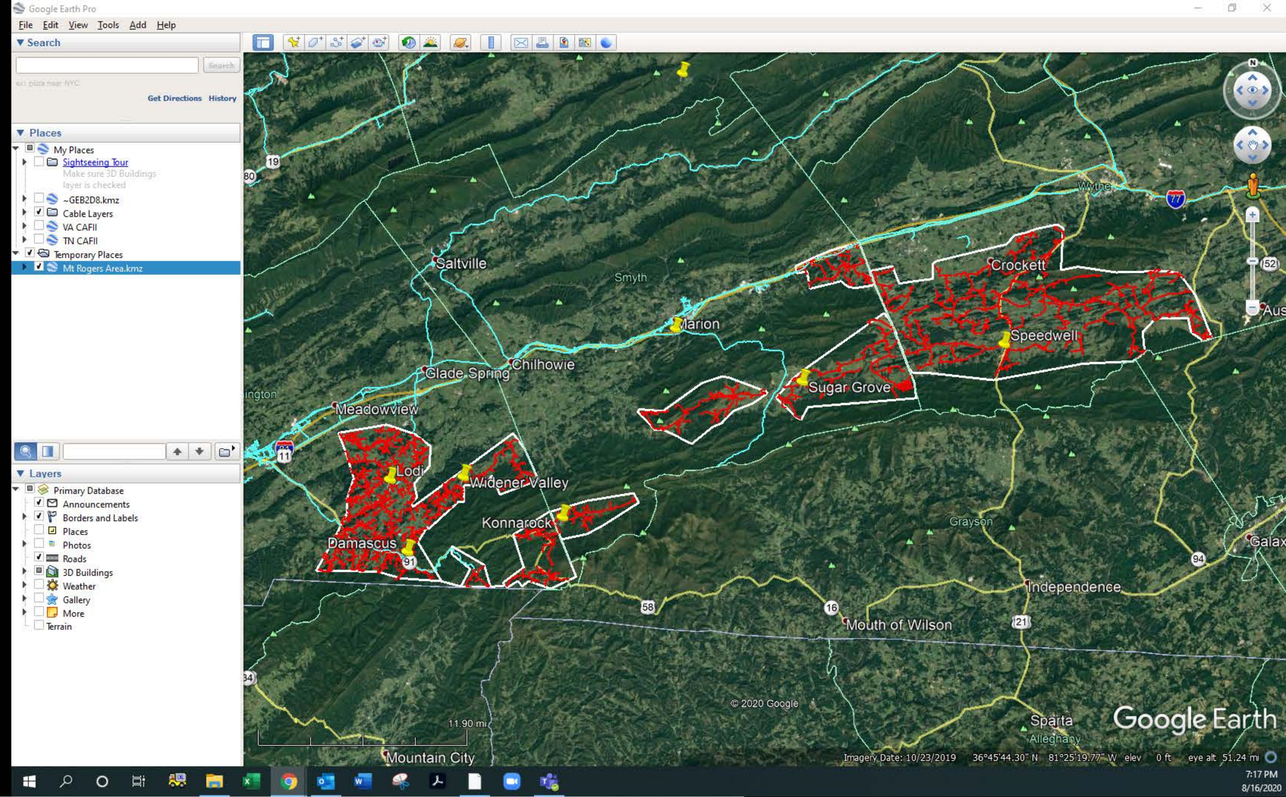
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3D Buildings
Weather
Gallery
More
Terrain
Saltville
Smyth
Marion
Crockett
Speedwell
Glade Spring
Chilhowie
Sugar Grove
Meadowview
Lodi
Widener Valley
Konnarock
Damascus
Grayson
Independence
Mouth of Wilson
Mountain City
Sparta
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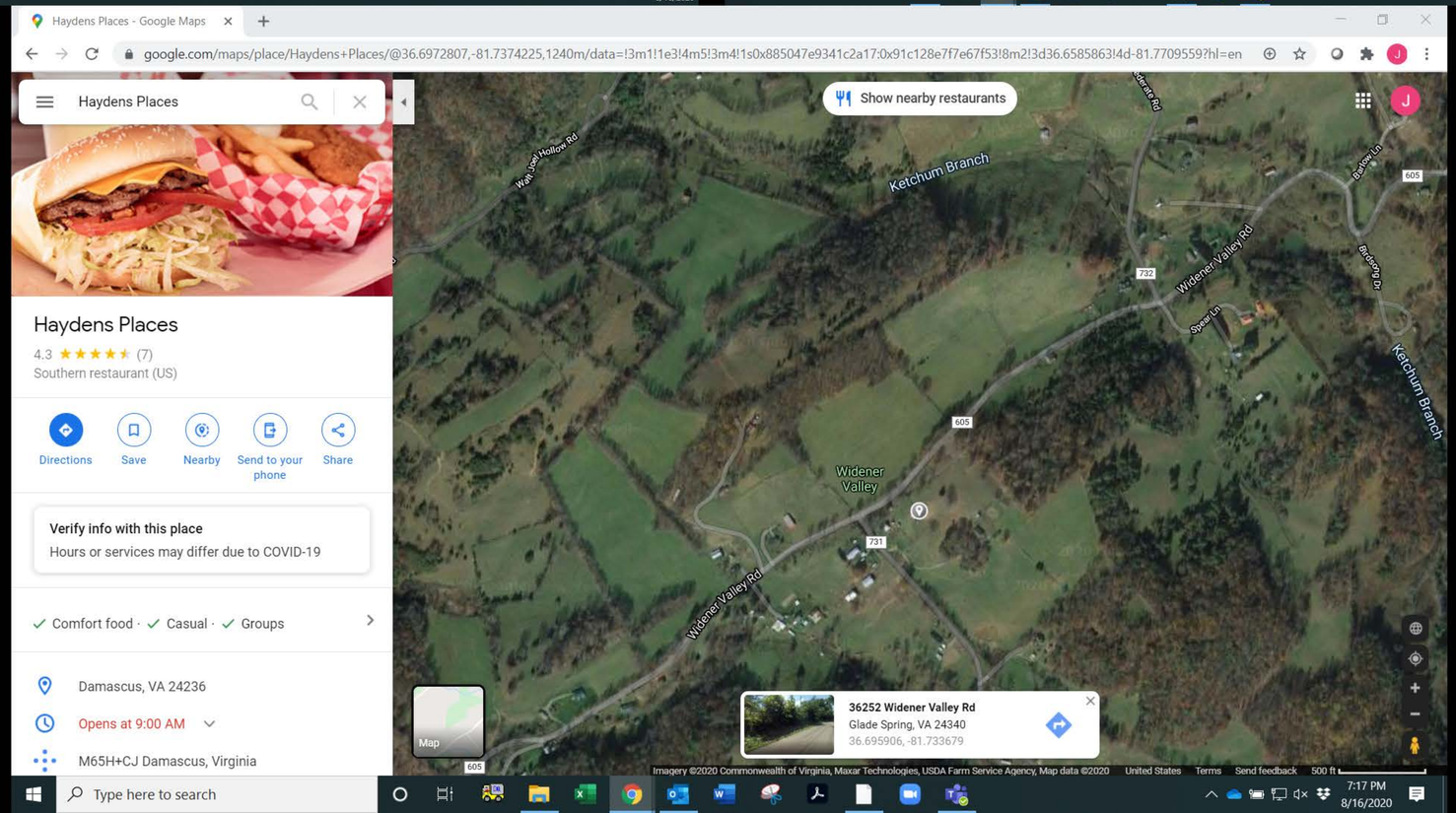
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Widener Valley Rd
Widener Valley
Ketchum Branch
36252 Widener Valley Rd
Glade Spring, VA 24340
36.695906, -81.733679
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Beulah Baptist Church - Google

google.com/maps/place/Beulah+Baptist+Church/@36.684045,-81.8150298,1073m/data=!3m1!1e3!4m5!3m4!1s0x88503f7a42cec53d:0xee819cc63f9c9f77!8m2!3d36.6815651!4d-81.815384?h...

Beulah Baptist Church

Beulah Baptist Church

4.3 ★★★★½ (12)

Baptist church

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19126 Monroe Rd, Meadowview, VA 24361

(276) 475-5021

M5JM+JR Meadowview, Virginia

Claim this business

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Monroe Rd Zephyr Rd Omega Ln Zimla Dr

721 91

Rhea Valley Elementary School

Beulah Baptist Church

21 min drive - home

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Columbus McKinnon - Virginia

google.com/maps/place/Columbus+McKinnon+-+Virginia/@36.6462006,-81.8180482,2647m/data=!3m1!1e3!4m5!3m4!1s0x885040efea3b3cdb:0x9c20b5e0ab1a936a!8m2!3d36.6404067!4d-...

Columbus McKinnon - Virginia

Columbus McKinnon - Virginia

4.2 ★★★★☆ (5)

Manufacturer

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22364 Jeb Stuart Hwy, Damascus, VA 24236

Closed today

columbusmckinnon.com

(276) 475-3124

J5RQ+5J Damascus, Virginia

Add a label

Suggest an edit

Monroe Rd Holston High School South Fork Holston River COUNTRY COTTAGE Sunset Memorial Laurel United Methodist Church Garrett Matthew S DVM Columbus McKinnon - Virginia 2 min drive - home Pizza Plus Wright Branch Fisher Hollow Settler's Point N Beaver Dam Ave Damascus Dr Blue Blaze Bike Rental & Shuttle Ramsey Branch

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Creeper Trail Bike Rental & Shutt

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Creeper Trail Bike Rental & Shuttle

Creeper Trail Bike Rental & Shuttle

4.7 ★★★★½ (194)

Bicycle rental service

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227 Douglas Dr, Damascus, VA 24236

Opens at 8:00 AM

creepertrailbikerental.company

(276) 475-3611

J6J8+VG Damascus, Virginia

Hikers Inn The Bike Station E 3rd St Shuttle Shack ATM (Cowboys) Creeper Trail Bike Rental & Shuttle 29 min drive · home SunDog Outfitter Off the Beaten Path Ice Cream Bicycle Junction Laurel Creek N Legion St N Railroad Ave N Alley St E 2nd St E 4th St E 5th St Trestle St Rebel Cir Fritz St Adkins St Douglas Dr

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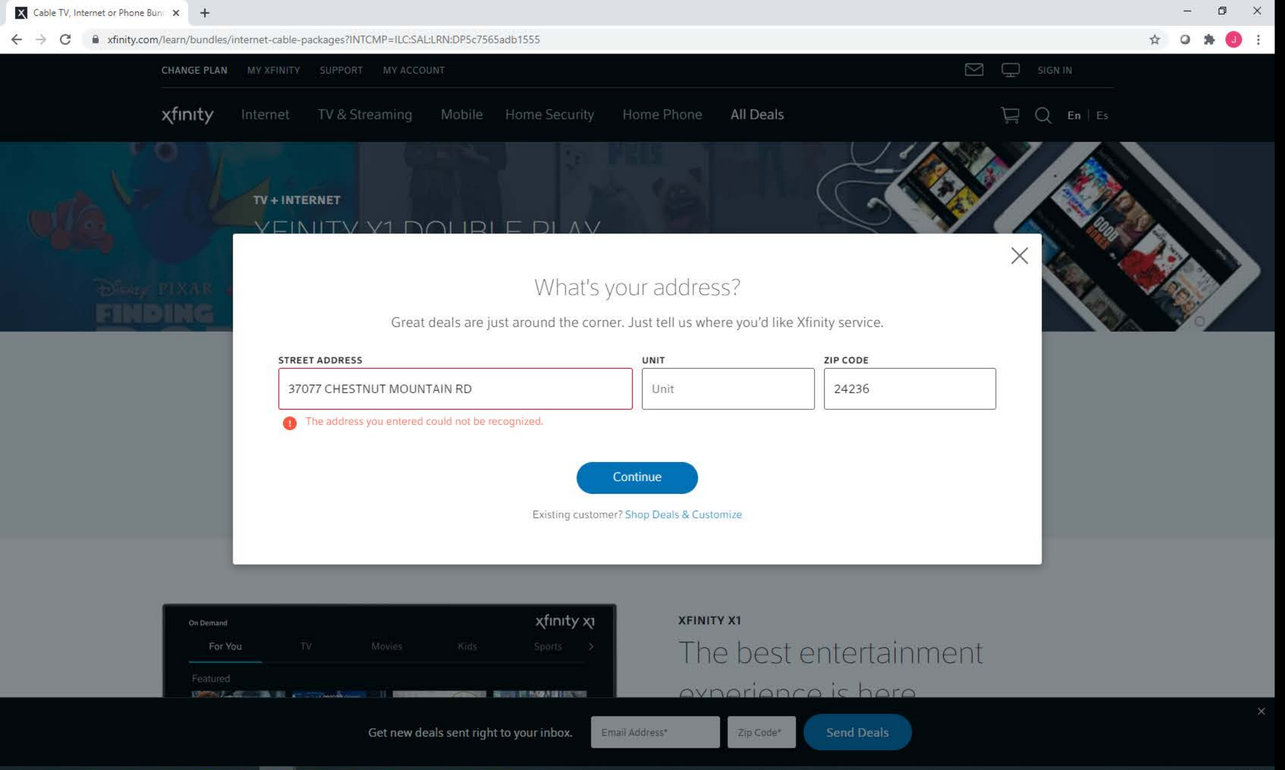
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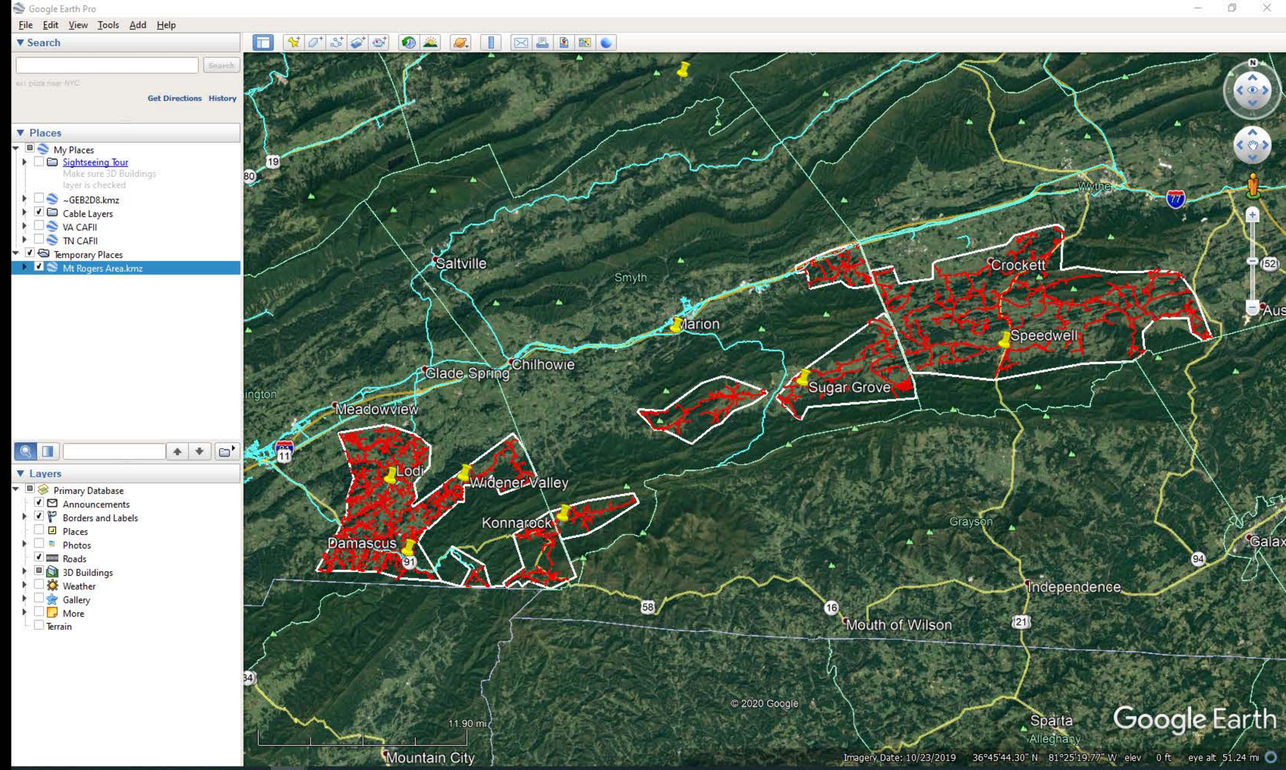
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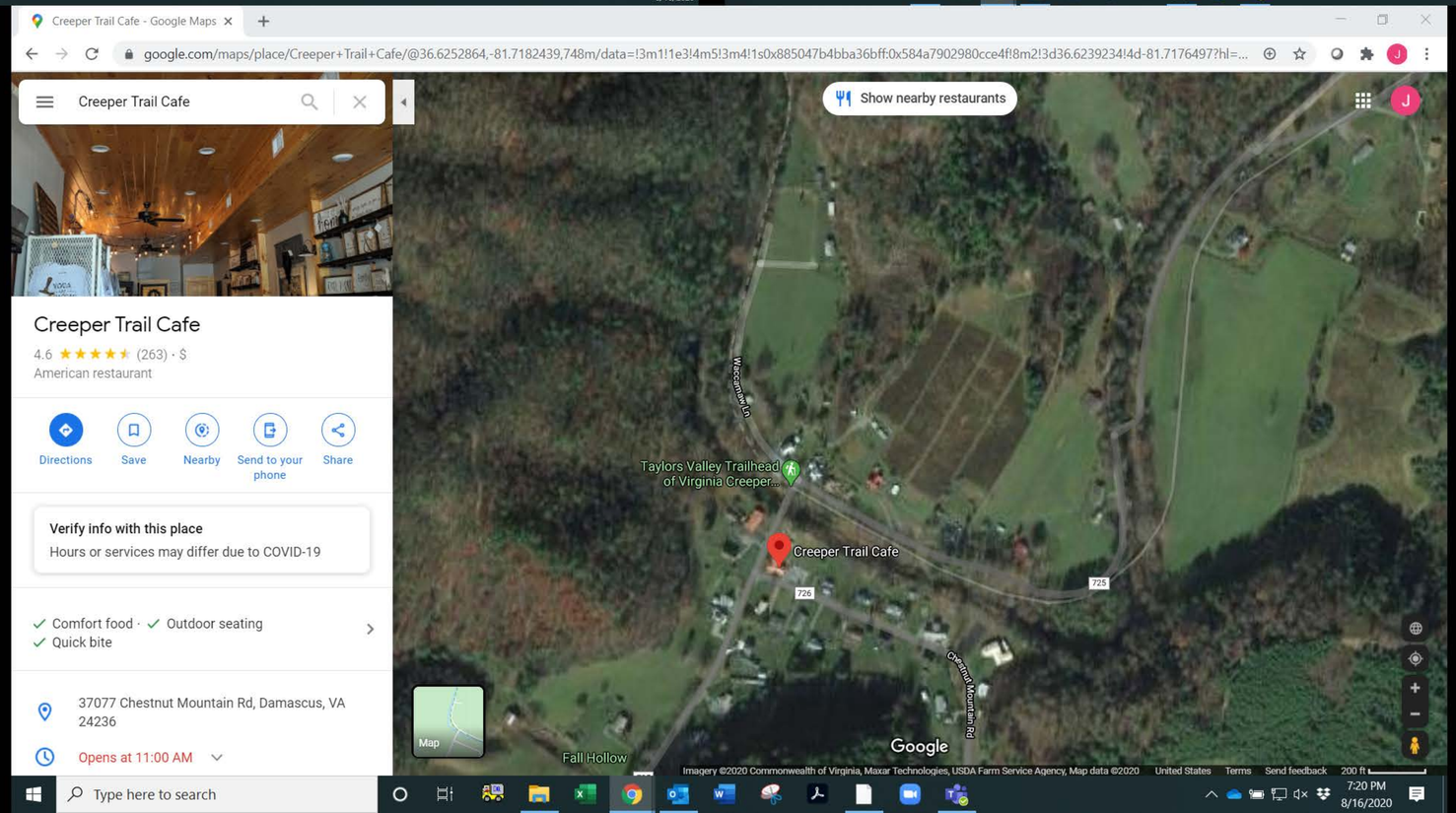
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google.com/maps/place/Creeper+Trail+Cafe/@36.6252864,-81.7182439,748m/data=!3m1!1e3!4m5!3m4!1s0x885047b4bba36bff:0x584a7902980cce4f!8m2!3d36.6239234!4d-81.7176497?hl=...
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4.6 (263) · $
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Comfort food · Outdoor seating
Quick bite
37077 Chestnut Mountain Rd, Damascus, VA 24236
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Taylors Valley Trailhead of Virginia Creeper...
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Konnarock Seventh-Day Adventis

Konnarock Seventh-Day Adventist Church

4.3 ★★★★½ (3)

Seventh-day Adventist church

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590 Konnarock Rd, Damascus, VA 24236

konnarocksda.org

(276) 388-3007

M973+PV Damascus, Virginia

Lumberton Rd Konnarock Rd 888 603 Whitetop Laurel Creek 755 Rhyner Rd

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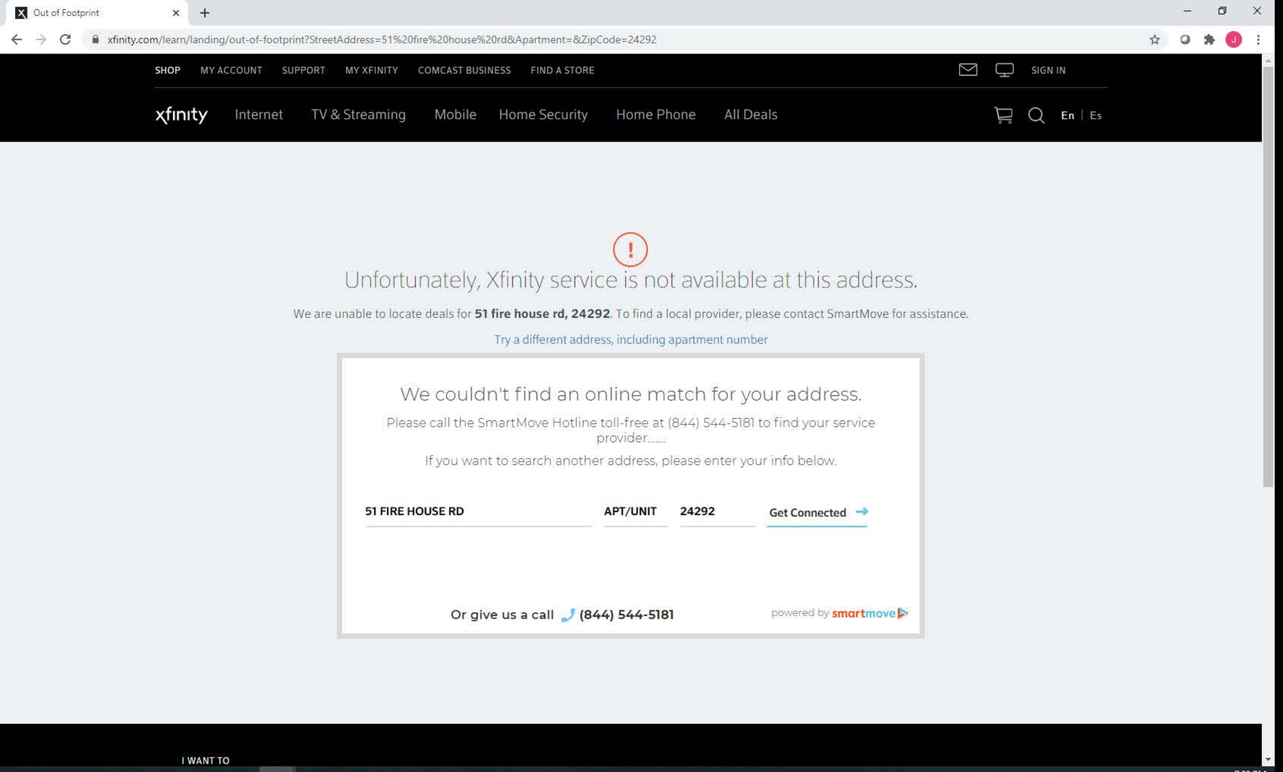
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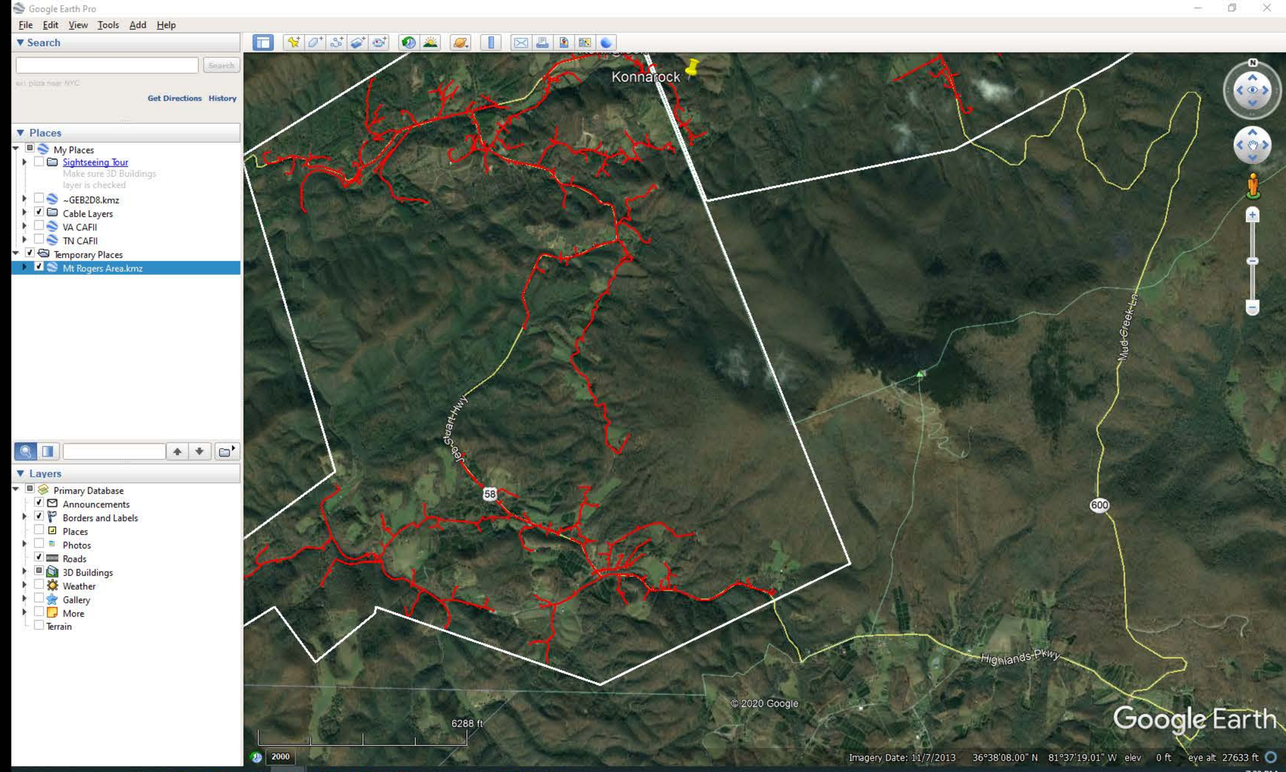
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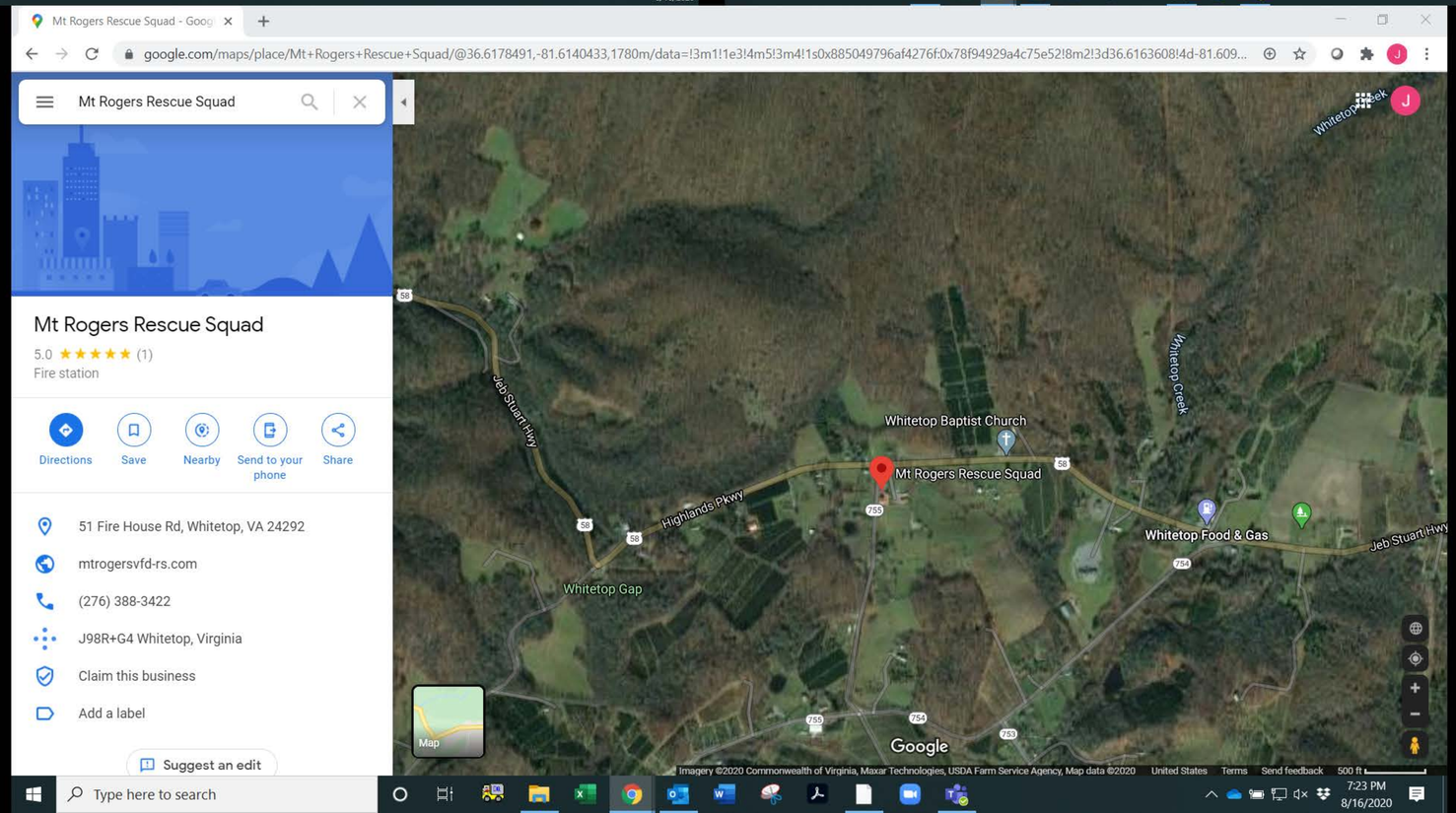
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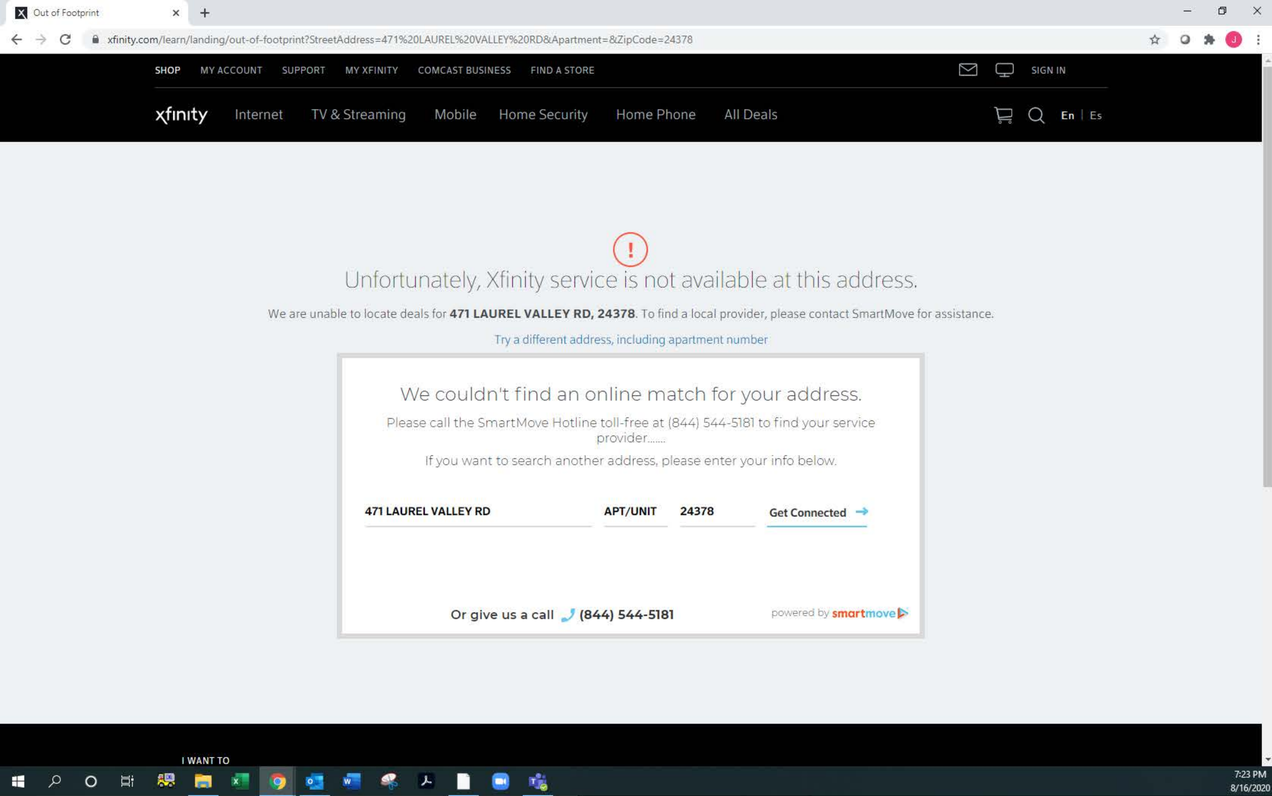
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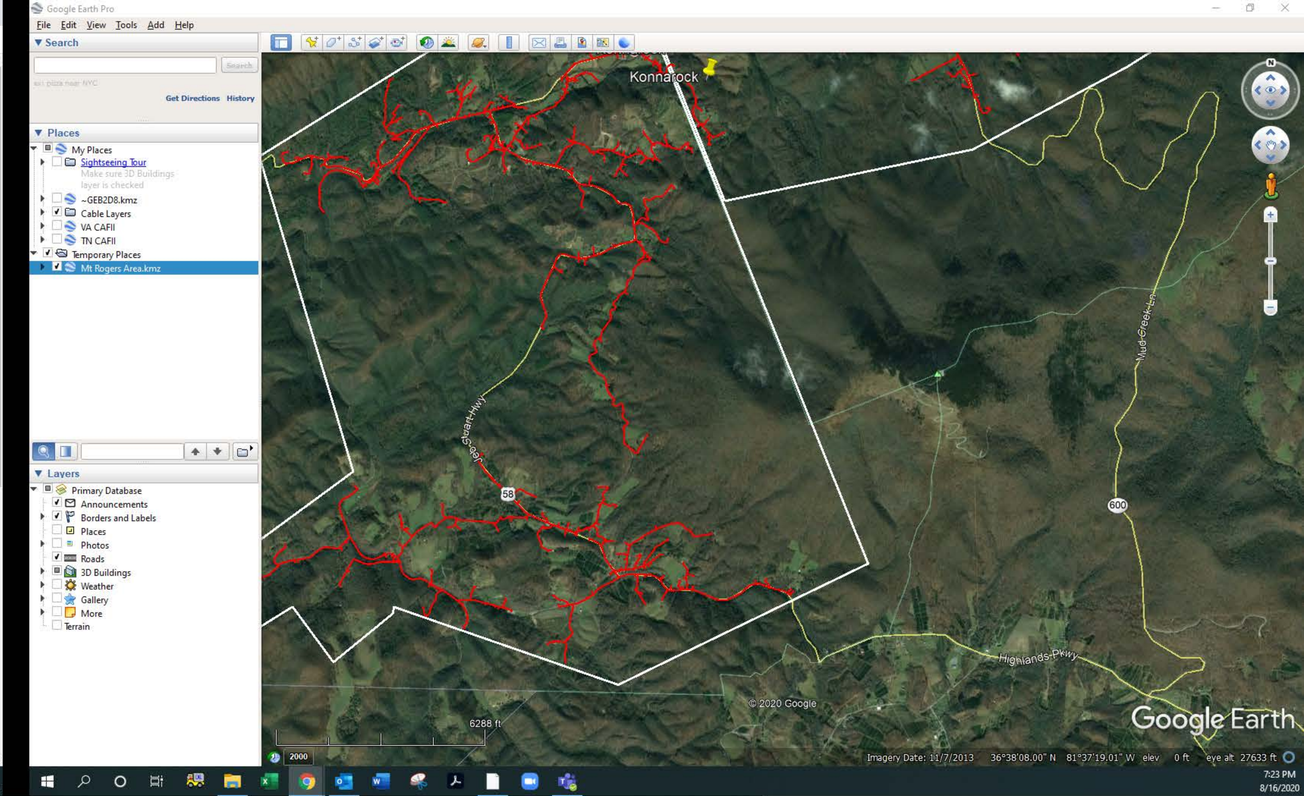
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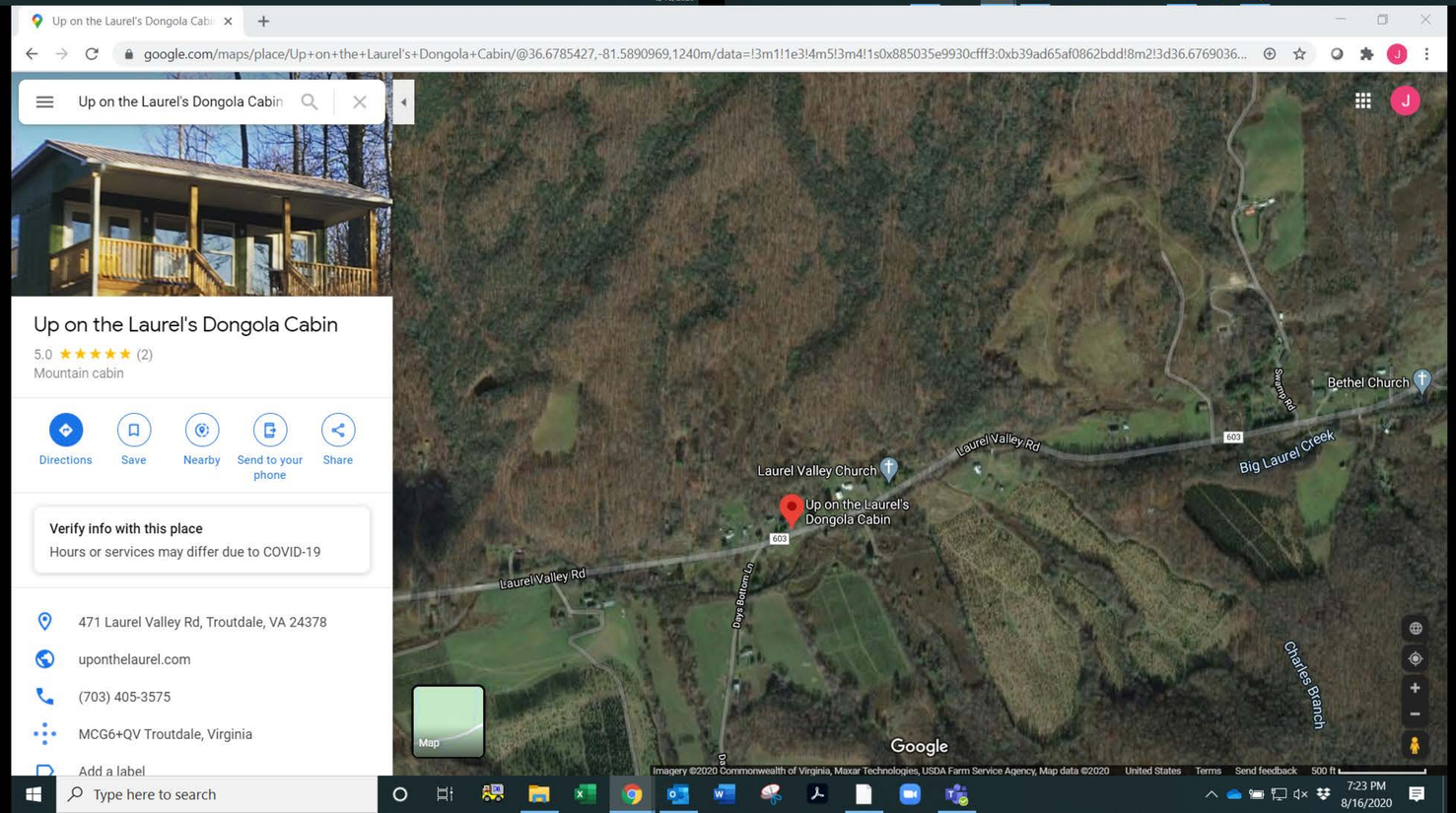
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uponthelaurel.com
(703) 405-3575
MCG6+QV Troutdale, Virginia
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Stony Battery

S Fork Rd

Teas Rd

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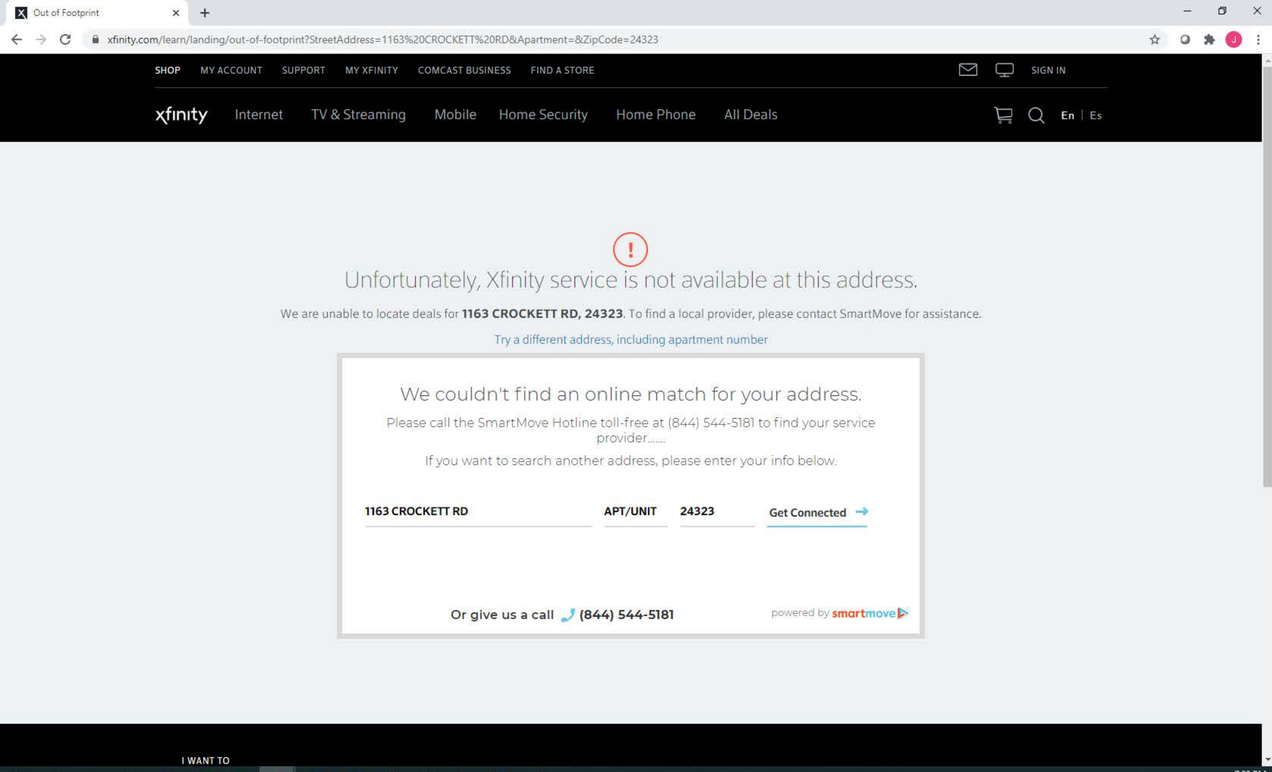
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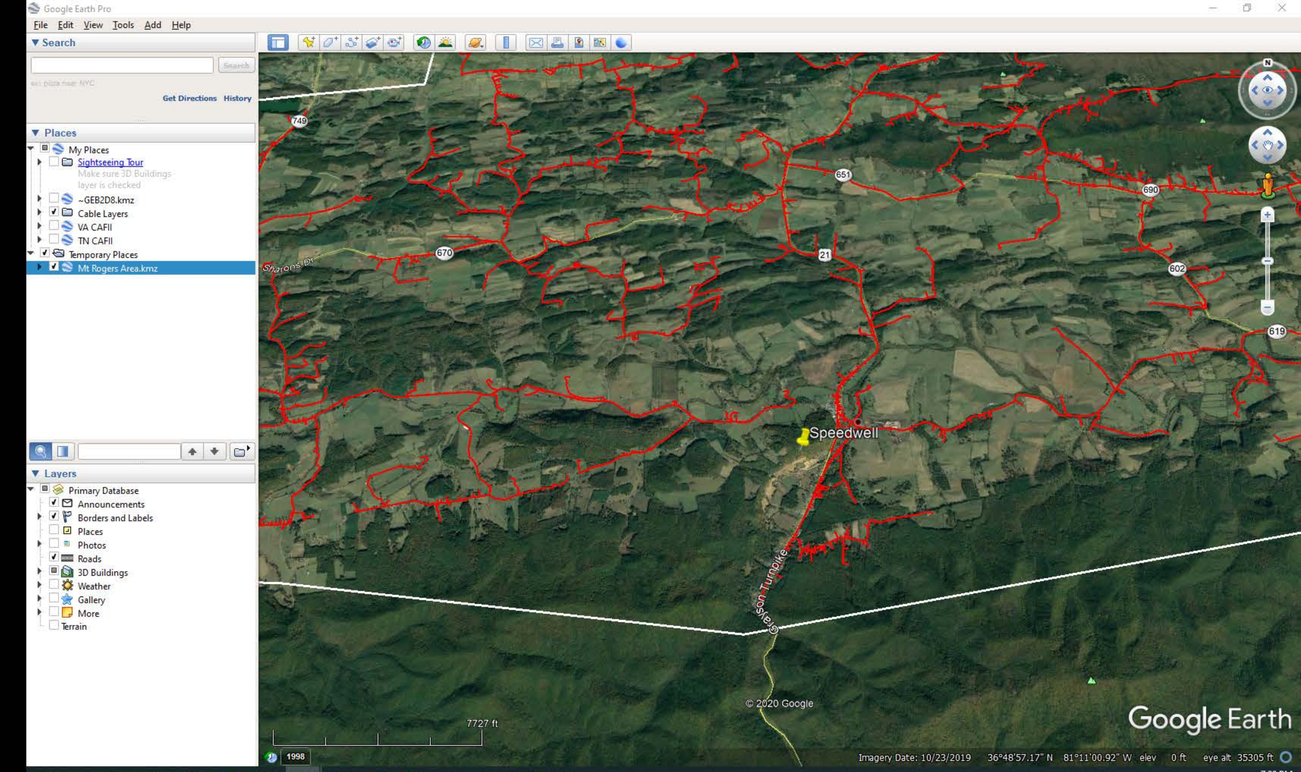
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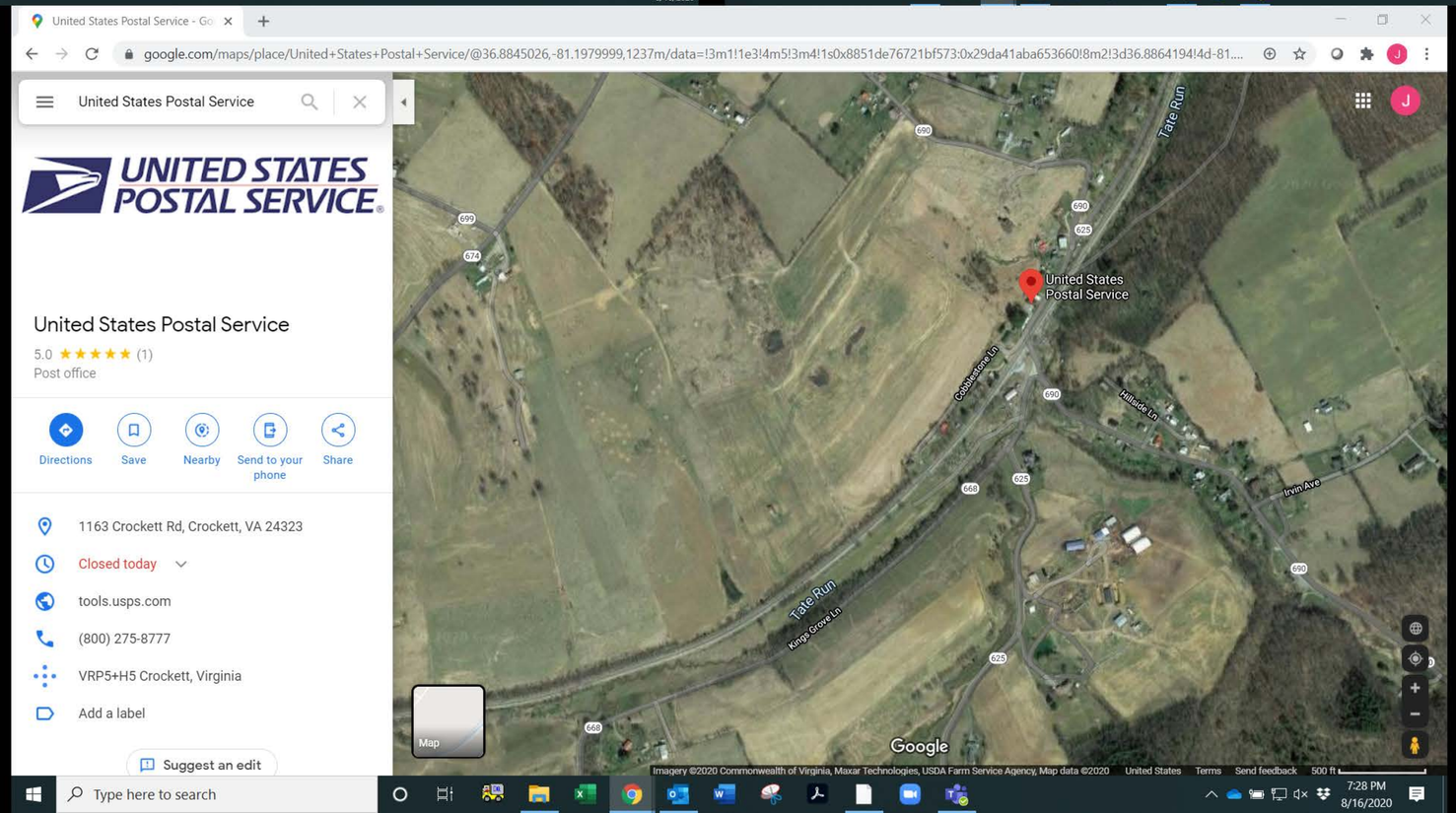
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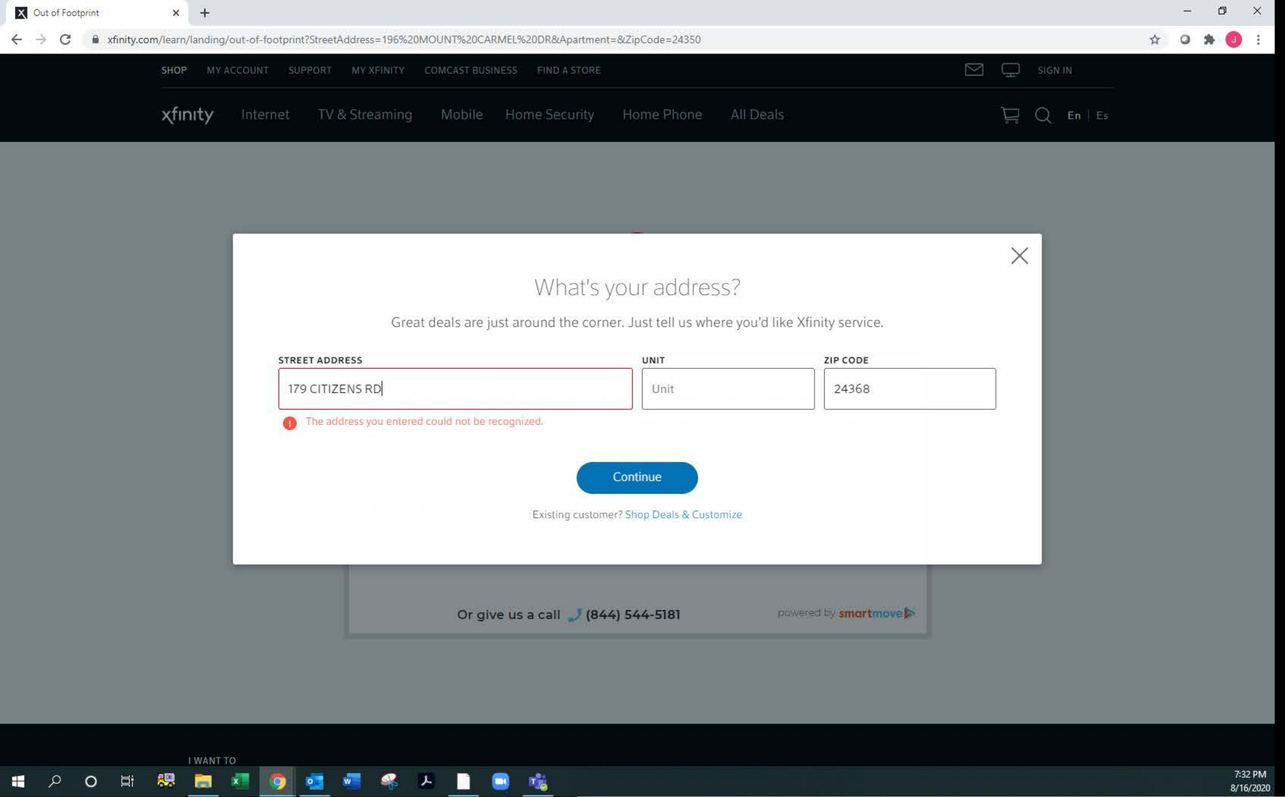
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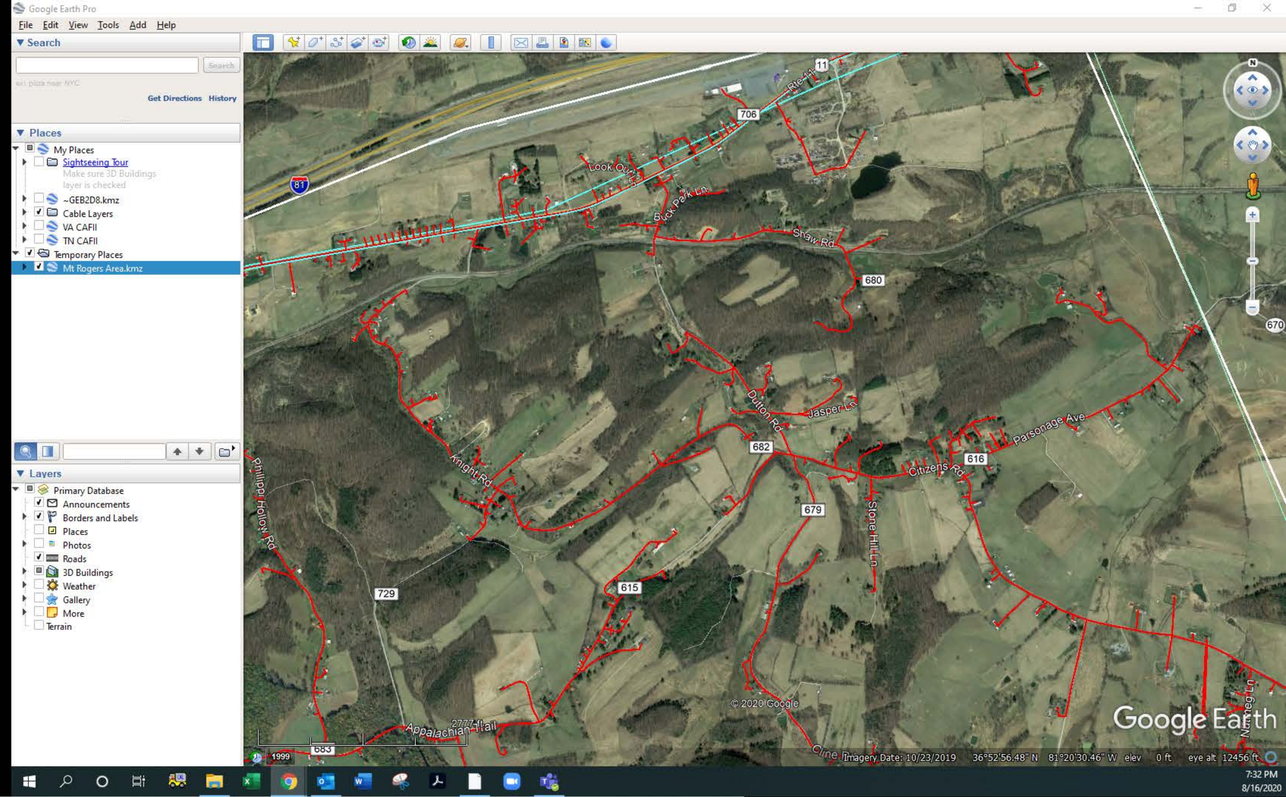
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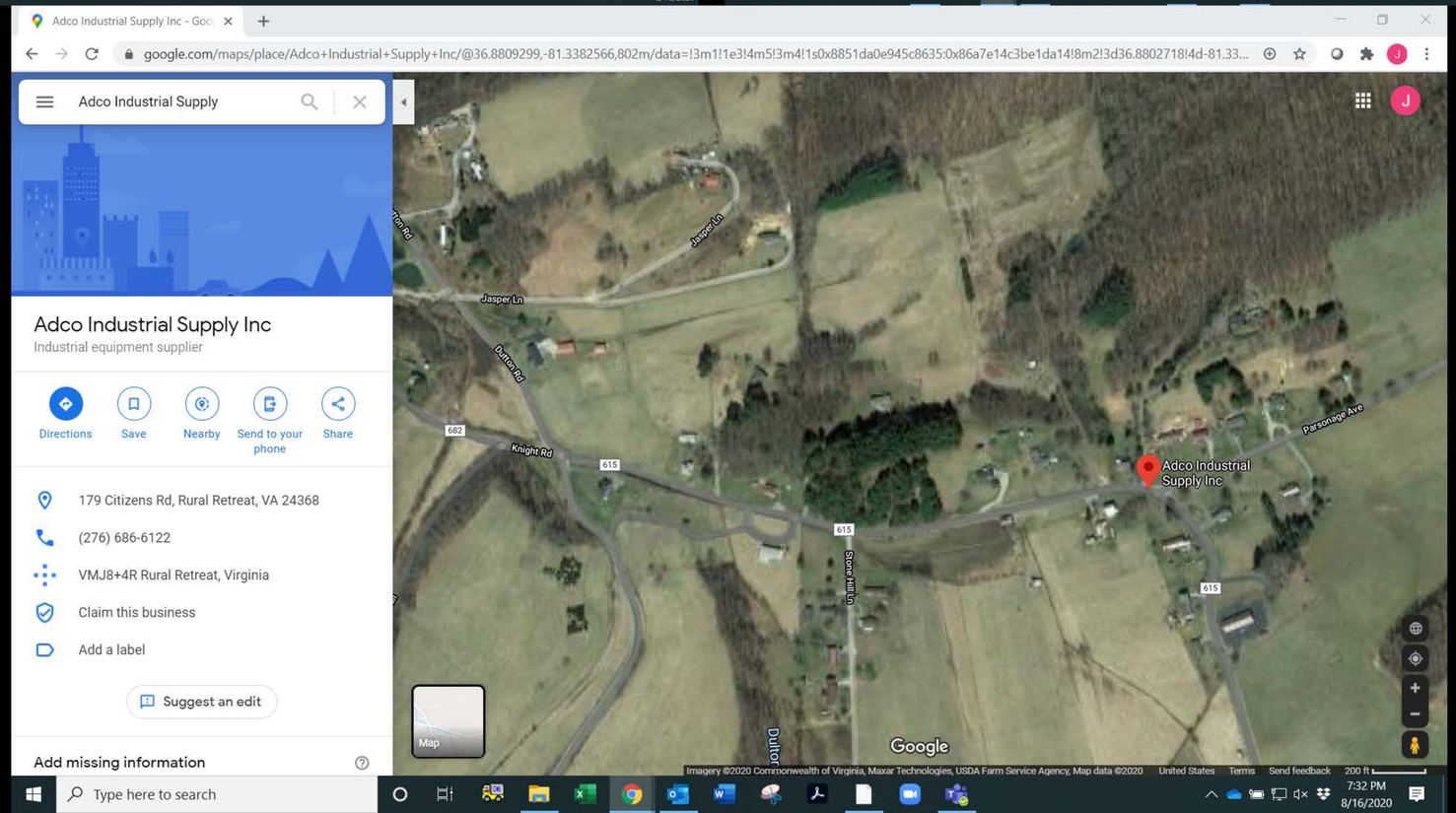
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Executive Summary

To support greater broadband access for Virginia students, teachers and administrative staff, the Virginia Department of Education (VDOE) established the K-12 Learning Infrastructure Program (KLIP) in 2015. KLIP has made significant progress increasing broadband connectivity. Survey results combined with other information reveal that 99% of public school buildings in Virginia are now connected to high-speed fiber and 122 divisions of 132 are exceeding the minimum bandwidth goal set by the Federal Communications Commission (FCC) of 100 kbps per student. Additionally the cost of bandwidth for schools is becoming more affordable with bandwidth costs decreasing as schools increase the amount of bandwidth needed to support digital learning. Results indicate that Virginia's public school system is currently in a good position to provide classroom connectivity that supports digital learning and the Board of Education's Profile of a Virginia Graduate. However, challenges do remain.

To decrease costs school divisions have leveraged state contracts and other competitive measures to include building their own fiber networks using E-rate and the Virginia Public School Authority (VPSA). These efforts have saved substantial funds while increasing bandwidth. However results show that some Virginia school divisions where there may be only one Internet service provider still pay more for Internet access than their counterparts in other locations in the state where competition exists. Survey results also suggest a number of other activities and factors that will require continual diligence to routinely evaluate, support and upgrade bandwidth in schools to meet student needs. High level information shows that there are almost 1 million mobile devices across all public school divisions in Virginia. These mobile devices are being deployed to support one-to-one programs so that students can access educational content targeted to their needs. Information security is a concern as well for school technology directors. The findings show that 53 divisions or 40% need additional personnel to support information security. In addition, 82 divisions reported they had never had an information security audit. School divisions in Virginia are also implementing digital and web-based learning programs requiring students to work and collaborate on assignments not only at school but also outside of the classroom. However the results also confirm that a large number of low-income and rural students are finding themselves caught in the "Homework Gap" and struggling to keep up due to a lack of home broadband connectivity. Ninety-two divisions indicated the lack of Internet access outside of school is either "Very" or "Somewhat" limiting. To continue building upon the broadband successes of Virginia's school divisions and the KLIP program and to meet current and future needs, the VDOE recommends additional funding and support for divisions' broadband programs, a heightened focus on information security, ongoing analyses of the school broadband landscape, and a state-level stakeholder-driven strategy with recommendations for connectivity that supports digital learning.

Bobby F. Keener, Jr.
Chief Technology Innovations Officer
Virginia Department of Education

Dr. Susan M. Clair
Learning Infrastructure Coordinator
Virginia Department of Education

Introduction

In 2015, the Virginia Department of Education (VDOE) initiated the **K-12 Learning Infrastructure Program** (KLIP) in partnership with the Office of the Governor, and the EducationSuperHighway (ESH). The KLIP program supports increased access to affordable, high-speed Internet in every classroom in Virginia. The goals of the KLIP also support Virginia's Profile of a Virginia Graduate.

KLIP Goals:

1. Get fiber to the schools that need it;
2. Ensure classrooms have updated and reliable Wi-Fi;
3. Help divisions secure more broadband for their budgets; and
4. Assist schools with the E-rate process to get the discounts they need for Internet access and internal connections

In the 2016 Virginia Appropriation Act (Item 137.G), the General Assembly directed school divisions to report to the VDOE, by November 1 of each year, the status of broadband connectivity capability of schools in the division.

In response to the General Assembly directive, the VDOE collaborated with the ESH to develop the 2017 KLIP Broadband Connectivity Capability Survey. The data collected on Internet access, the first nine questions of the survey (Appendix A), was verified by school division technology leaders so that the information would be as accurate as possible. This was an important step because while the FCC Form 471 from the E-rate program data is the most comprehensive publicly available data, it can sometimes be ambiguous as a result of occasional errors on the Form. The VDOE also collected other broadband related data from school technology leaders to better understand the technology landscape in Virginia's public schools. The data collection was open from July 2017 to October 2017. After extensive follow-up, all 132 school divisions completed the survey. However, not all school divisions responded to all questions. Divisions reported the following information for the 2017 school year:

- Internet Access and Bandwidth
- Affordability
- Barriers to Connectivity
- Number and Brand of Student Computing Devices (e.g. Chromebooks, tablets, laptops)
- Resources Needed to Support Digital Learning
- Information Security
- Internet Outside of School

Internet Access and Bandwidth

Fiber Connectivity

The network infrastructure in schools needs to keep pace with the digital learning challenges in K-12 and new opportunities for innovation. Network capabilities are critical to the K-12 mission today. This requires schools to have scalable fiber connections to the Internet. Fiber connections are very important because they allow schools to scale to extremely high bandwidth and this type of broadband is becoming increasingly more affordable. School buildings connected to fiber increased from 82% in 2014 to 99% in 2017: Source: EducationSuperHighway.

There is a total of 1,810 public school buildings in Virginia's public school system. The percentage of school buildings connected to fiber increased from 82% in 2014 to 99% in 2017. Today, only seven school buildings do not have a fiber connection. The schools not on fiber are in geographically remote locations where fiber is not available. The VDOE and the ESH have been working with the schools in divisions not on fiber to help them with strategy. The strategic approach is intended to research the viability and affordability of bringing fiber to school buildings in remote locations using E-rate funds and the Virginia Public School Authority (VPSA) matching funds. In some cases however, a school division may decide not to move forward with a fiber project because of the expense, limited number of students enrolled in the school, and because the existing technology is sufficient to serve the bandwidth needs of the school. Once schools have a scalable, fiber connection to the Internet, it is essential that students, teachers, and staff, have enough bandwidth for digital learning. To help schools across the country assess how much bandwidth is sufficient to support digital learning, the Federal Communications Commission (FCC) adopted the State Education Technology Directors Association (SETDA) recommended connectivity target of 100 Megabit per second (Mbps) per 1,000 students in the short term and 1 Gigabit per second (Gbps) per 1,000 students in the long term. These targets were recommended in the SETDA publication, go to the *The Broadband Imperative: Recommendations to Address K-12 Education Infrastructure Needs.* For the purposes of this Report, these bandwidth numbers were further broken down as 100 Mbps per 1,000 students which is equivalent to 100 Kilobits (Kbps) per second per student.

Bandwidth Goal

Since 2015, an additional 777,768 students in 70 divisions upgraded to the goal. According to the ESH, the average bandwidth including all divisions statewide per student is 368 kbps. The median bandwidth including all divisions statewide per student is 216 kbps. The need for additional bandwidth is ongoing as mobile computer devices such as Chromebooks are added to school networks. In addition, students and teachers are increasing the use of streaming video content and other bandwidth intensive technologies. Today the typical school division, in the median range, has over twice the FCC's 2014 minimum recommended amount of bandwidth. Today in Virginia, 122 divisions of 132 are exceeding the minimum bandwidth goal of 100 kbps per student. Source: EducationSuperHighway

In 2014, only 34% of school divisions met the FCC's minimum recommended goal of 100 kbps/student. In 2017, 92% of divisions met or exceeded this goal. This means that most students in Virginia's public schools currently have the bandwidth needed to access digital resources. The school divisions that are not at 100 kbps/student are currently working on upgrades.

Affordability

School division technology leaders can use price transparency tools to negotiate lower costs for Internet access. As school divisions purchased larger amounts of bandwidth, the price per megabit decreased. In the 2014 E-rate Modernization Order, the FCC set forth three major goals of the E-rate program. One of the three major goals was to ensure affordable access to high-speed broadband sufficient to support digital learning in schools.

The Schools and Libraries (E-rate) Program

E-rate is one of four Universal Service Fund (USF) programs supported by USF fees collected via telecommunications providers. The FCC's Universal Service for Schools and Libraries Program (often referred to as E-rate) is known as a "discount" program. The E-rate program provides subsidies on Internet access and internal connections based on the school division's free and reduced lunch numbers. The percentage of free and reduced lunch eligible students, along with the school division's geographical locale (urban or rural) is entered into a formula that calculates the E-rate discount. A division's E-rate discount can range anywhere from 20 percent to 90 percent. The program is currently capped at $3.9 billion. Authorized under the Telecommunications Act of 1996, E-rate's authors focused the program on connecting all schools and libraries to the Internet. Since the FCC's 2014 E-rate Modernization Order, the E-rate's goal is to ensure that all schools and libraries have ample bandwidth to meet the educational needs of students and library patrons. To accomplish this goal, E-rate provides public and private schools and public libraries with support for category one services which include internet access and data transport (Wide Area Networks) between school facilities. Discounts are provided as a percent of total eligible project costs. E-rate also provides support for category two funding which includes internal connections and managed internal broadband services (Wi-Fi). Discount maximums are determined by school enrollment and poverty level.

The Compare and Connect K-12 (CCK-12) tool developed by ESH, provides price transparency to schools and Internet service providers and reveals the going rate for broadband. Go to the Compare and Connect K-12 Tool for more information. Because the CCK-12 tool was available, some school divisions in Virginia were able to compare the cost they pay for broadband to another school division or multiple divisions in the same geographic area. The CCK-12 tool was one resource that division technology directors used to further negotiate better pricing for Internet access. In addition, as school divisions purchased larger amounts of bandwidth, the price per megabit decreased.

In 2017, only 29% of Virginia school divisions met the benchmark. Source: EducationSuperHighway

The benchmarks are updated based on a national analysis of connectivity data, and represents prices at different circuit speeds that were achieved by districts across the country in 2015. In Virginia in 2017 only 29% of divisions met this benchmark. The specific benchmarks in the table are:

Internet Access Circuit Size	Price Benchmark
10 Gbps	$0.75
1 Gbps	$3.00
500 Mbps	$5.50

Internet Access Circuit Size	Price Benchmark
200 Mbps	$9.00
100 Mbps	$12.00
50 Mbps	$14.00

The benchmark table metric compares the amount of bandwidth school divisions currently receive to the amount they could receive if those same funds were used to purchase Internet access at 2015 national benchmark prices. For more information about affordability benchmarks, please go to the EducationSuperHighway' s 2017 State of the States Report. While these benchmarks are a guide for schools to follow, there are several factors that impact the cost of Internet. These factors include the location of the school division. If a school division or school buildings within a division are located in a rural area, the division may pay more for Internet service because provider cost to build fiber to these areas is higher. There may also be only one Internet service provider in the area and no competition from other providers to drive down costs. The top 5 school divisions in Virginia with the most affordable Internet access include: $0.45/Mbps: Harrisonburg City, $0.68/Mbps**:** Rappahannock County Public Schools, $0.74/Mbps: Roanoke City Public Schools, $0.75/Mbps: Falls Church City Public Schools, $0.79/Mbps: Campbell County Public Schools Some school division technology directors reported why they are one of the five divisions with the most affordable Internet access. For example, one technology director stated: "We did our research and found out the cost at other school divisions and businesses in the surrounding county areas. Our provider had a cost greater than $20 per Mbps with a 500 Mbps upload and download speed. With a forward vision, we contracted to have 48 strands of fiber placed in the county from our central office to our surrounding schools to upgrade our Internet capabilities. We then re-negotiated with the provider for a 10Gbps bandwidth upgrade which gave a more reasonable price for the service. Our contract is for 3 years with a re-negotiation clause after 2 years of service. There is a hidden cost of the fiber install but without the fiber, we could not have the bandwidth pricing."

Another school division technology director reported that the reason for the low cost of Internet connectivity is because they are close to the service provider's Point of Presence (POP) and a long standing customer of the provider. Another reason for the low cost per megabit is because this school division purchased a combination of services including Internet, Wide Area Network (WAN) transport, and voice. For this division, purchasing a combination of services drove down pricing and made Internet access per month more affordable. Under the E-rate program, another division is receiving the Lowest Corresponding Price (LCP) for 10 Gbps to all school locations within the division and 10 Gbps for Internet access. The per megabit price drops as bandwidth increases resulting in schools paying less for more bandwidth. Thus, economies of scale pay off for school divisions that purchase more bandwidth and get lower costs for it. Top 5 school divisions in Virginia with the least affordable Internet access: $52.25/Mbps: Northampton County Public Schools, Eastern Shore of Virginia, $50.00/Mbps: King and Queen County Public Schools, Gamewood Technology $31.12/Mbps: Bland County Public Schools, BVU Authority, $29.44/Mbps: Westmoreland Public Schools, Metro Cast Cablevision, $25.85/Mbps: Mathews County Public Schools, Metro Cast Cablevision and CenturyLink.

Some school divisions in Virginia pay more than other divisions in the state because of their geographical location. For example, one school division technology director reported that Metro Cast Cablevision was the only service provider that could provide an E-rate FCC Form 470 response for a bid that met the needs of their rural schools. Another rural school division technology director on the Northern Neck of Virginia reported that

the only way they could get Internet access was through an established service provider in the area that had already installed fiber. Yet another division technology director reported that they do not have any affordable options pointing out that one service provider has cornered the market in their region of the state.

Cost per Megabit per Second (Mbps) for School Internet Access

Sixty-six school divisions, or 50 % are paying an average cost of $0.00 to $5.00 dollars per megabit per second. These 66 school divisions include:
Albemarle County Public Schools
Alexandria City Public Schools
Alleghany County Public Schools
Amherst County Public Schools
Appomattox County Public Schools
Arlington County Public Schools
Augusta County Public Schools
Botetourt County Public Schools
Buena Vista City Public Schools
Bristol City Public Schools
Buchanan County Public Schools
Campbell County Public Schools
Caroline County Public Schools
Charlottesville City Public Schools
Chesapeake City Public Schools
Chesterfield County Public Schools
Clarke County Public Schools
Covington City Public Schools
Dinwiddie County Public Schools
Fairfax County Public Schools
Falls Church City Public Schools
Fauquier County Public Schools
Fluvanna County Public Schools
Franklin City Public Schools
Franklin County Public Schools
Frederick County Public Schools
Fredericksburg City Public Schools
Grayson County Public Schools
Giles County Public Schools
Greene County Public Schools
Hampton City Public Schools
Hanover County Public Schools
Harrisonburg City Public Schools
Henrico County Public Schools
Lexington City Public Schools

Louisa County Public Schools
Loudoun County Public Schools
Lynchburg City Public Schools
Madison County Public Schools
Newport News City Public Schools
Page County Public Schools
Patrick County Public Schools
Poquoson City Public Schools
Portsmouth City Public Schools
Prince William County Public Schools
Radford City Public Schools
Rappahannock County Public Schools
Richmond County Public Schools
Roanoke City Public Schools
Roanoke County Public Schools
Rockbridge County Public Schools
Rockingham County Public Schools
Salem City Public Schools
Shenandoah County Public Schools
Smyth County Public Schools
Southampton County Public Schools
Spotsylvania County Public Schools
Stafford County Public Schools
Staunton City Public Schools
Suffolk County Public Schools
Virginia Beach City Public Schools
Warren County Public Schools
Washington County Public Schools
West Point Public Schools
Williamsburg- James City County Public Schools
York County Public Schools

Forty-one school divisions or 31.2 % are paying any average cost of $5.10-$11.40 and include:
Accomack County Public Schools
Bedford County Public Schools
Brunswick County Public Schools
Carroll County Public Schools
Charlotte County Public Schools
Colonial Heights City Public Schools
Culper County Public Schools
Cumberland County Public Schools
Danville City Public Schools
Floyd County Public Schools

Galax City Public Schools
Gloucester County Public Schools
Goochland County Public Schools
Greensville County Public Schools
Henry County Public Schools
Hopewell City Public Schools
Isle of Wight County Public Schools
King George County Public Schools
Lancaster County Public Schools
Manassas Park City Public Schools
Manassas City Public Schools
Martinsville City Public Schools
Mecklenburg County Public Schools
Middlesex County Public Schools
Nelson County Public Schools
New Kent County Public Schools
Norfolk City Public Schools
Northumberland County Public Schools
Nottoway County Public Schools
Orange County Public Schools
Petersburg City Public Schools
Powhatan County Public Schools
Prince George County Public Schools
Prince Edward County Public Schools
Scott County Public Schools
Surry County Public Schools
Tazewell County Public Schools
Waynesboro City Public Schools
Winchester City Public Schools
Wise County Public Schools
Wythe County Public Schools

Sixteen school divisions are paying an average cost of $11.5-$20.00 or 12.1 % and include:
Bath County Public Schools
Buckingham County Public Schools
Charles City Public Schools
Craig County Public Schools
Dickenson County Public Schools
Essex County Public Schools
Halifax County Public Schools
King William County Public Schools
Lee County Public Schools
Lunenburg County Public Schools

Norton City Public Schools
Pittsylvania County Public Schools
Pulaski County Public Schools
Richmond City Public Schools
Russell County Public Schools
Sussex County Public Schools

Seven school divisions are paying an average cost of $20.10-$31.10 or 5.3% include:
Amelia County Public Schools
Bland County Public Schools
Colonial Beach Public Schools
Highland County Public Schools
Mathews County Public Schools
Montgomery County Public Schools
Westmoreland County Public Schools

Two school divisions are paying an average cost of $31.20-$52.30 or 1.6% and include:
King & Queen County Public Schools
Northampton County Public Schools

Barriers to Connectivity

- School Wi-Fi networks are becoming increasingly complex and more demands are being placed on staff to manage the technology.

School technology leaders were asked to identify the most significant barriers to increasing Internet connectivity in their division. Forty-nine divisions or 17% reported that additional division personnel were needed to support the network. Today's school technology staff are experiencing a significant increase in workload as a result of increased reliance on digital solutions. Continuous improvement and change within the network components and Wireless Local Area Network (WLAN) make it difficult to keep up and manage the network. The next most significant barrier to connectivity is a lack of competitive pricing for Internet service because there are few service providers in the geographic area in which the division is located (44 divisions or 15%). Other reported barriers include the monthly recurring costs schools pay for Internet, and the capital/upfront, nonrecurring expenses. Nonrecurring costs are one-time costs such as fiber installation, and internal connections such as switches, routers, and Wireless Access Points (WAP). These barriers could prevent school divisions from supporting a reliable, secure, and stable network, and the myriad of digital resources available to support teaching and learning.

Virginia Public School Authority (VPSA) Matching Funds for Special Construction

- E-rate and VPSA funds combined save schools thousands of dollars over time on high-speed, scalable, fiber networks.

In the Second E-rate Modernization Order, the FCC permitted schools and libraries to seek E-rate support for self-provisioning of their own high-speed broadband networks, or portions of networks, beginning in E-rate funding year 2016. Also, beginning in funding year 2016, the E-rate program provided additional category one funding, up to 10 percent, to match state funding for special construction charges for high-speed broadband connections. These matching funds were intended to encourage states to address school and library connectivity gaps. The E-rate program will also match special construction funding when a state provides additional funding. In 2016, Virginia approved the use of the VPSA funds as a state match for the special construction charges that schools incur when they build their own fiber network. These funds were traditionally used by school divisions to establish computer-based instructional and testing systems for the Standards of Learning (SOL) and to develop the capability for high-speed Internet connectivity at high schools followed by middle schools and elementary schools. The E-rate Program increased an applicant's discount rate for special construction charges up to an additional ten percent to match the state funding on a one-to-one dollar basis.

According to the ESH, in 2016 and 2017, five school divisions received a total of $771,393 in VPSA state matching funds for special construction. The five divisions that used both E-rate discounts and state matching funds were: Orange County Public Schools, Goochland County Public Schools, Albemarle County Public Schools, Fredericksburg Public Schools and Louisa County Public Schools. These divisions had special construction projects approved by the Universal Services Administrative Company (USAC) for a total cost of $5,719,793 for broadband investment in school divisions. This means for every $1 of VPSA funds awarded, $7 in broadband investment was returned back to Virginia, essentially a 7:1 return on investment of state funds. This 7:1 ratio means for every dollar the state funds for special construction, it gets back $7 for its public schools. Source: EducationSuperHighway.

Approximately 28,847 students attend these five school divisions. In addition, three divisions: Bath County Public Schools, King William County Public Schools, and Sussex County Public Schools, applied for a total of $55,255 in state match funding for projects in 2018.These projects are still awaiting USAC review, for a total funding request of $405,230. In summary, eight school divisions with a total of 32,722 students division wide were impacted by the state matching fund program. School divisions that constructed their own fiber networks were able to reduce the expense of these networks by using E-rate and VPSA funds and saved their divisions thousands of dollars while increasing the bandwidth needed to support digital learning.

Sufficiency of Wi-Fi Connections

- More work needs to be done in assisting school divisions with Wi-Fi networks

School technology leaders were asked to rate the sufficiency of Wi-Fi connections in school buildings in the division. Because assessing Wi-Fi connectivity is subjective, each respondent's understanding of "sufficient" will differ to some extent, and division-to-division comparisons can be difficult because of how the network is designed in each school building. If school division technology leaders selected that their Wi-Fi was not completely sufficient on the survey, they were then asked to describe the impact of the problem on the school building, grades, or students, and what they needed to solve the problem. The responses included adding more

WAP's in areas where mobile computing had increased in the past 12 months, adapting the latest WAP standards, older school buildings with outdated infrastructure were a challenge in deploying Wi-Fi, and the need for more bandwidth. Planning, procuring, and managing Wi-Fi networks constitutes some of the most complex and challenging responsibilities of a school division technology director.
Fifty-five percent or 73 divisions reported that Wi-Fi was completely "sufficient" while 43% or 57 divisions reported that Wi-Fi was Not Completely Sufficient.

Fifty-five percent or 73 divisions reported that Wi-Fi was completely sufficient while 43% or 57 divisions reported that Wi-Fi was Not Completely Sufficient. More work needs to be done by VDOE to assist schools with Wi-Fi implementation since this technology continues to evolve and more mobile computing devices and other technologies are added to school networks.

Number and Brand of Student Computing Devices

- Schools are adding more mobile devices to support one-to-one computer device programs.

Schools are deploying more computing devices such as Chromebooks, tablets, laptops, and other devices to access digital learning resources. There are 1.2 million students in Virginia's public school system. There are 994,535 mobile computer devices in use across all of the 131 school divisions who responded to the survey question about the number and brand of computing device. This brings the total number of instructional devices available to students at, or approximately 0.8 devices per student. All 131 school divisions have close to one mobile computing device per student. Within the Chromebook category, Hewlett-Packard (HP), Lenovo and Dell are the top choices, with 48, 36 and 34 divisions using Chromebooks manufactured by those brands. Google comes in fourth place with 10, with the remainder split between Acer, Asus, IBM, and Samsung.

In the tablet computer category, Apple is the clear leader with 97 divisions using iPads. Dell is a distant second place with 11 divisions. Laptops are mostly split between Dell (65 divisions), HP (50 divisions), and Lenovo (22 divisions). And, for the divisions that provide students with Smartphones for learning, the Apple iPhone was the top choice.

In addition, 108 technology directors indicated that they planned to purchase additional computing devices in the 2018-2019 school year. These purchases are being made to support one-to-one computer device programs. By this measure, the demand for devices does not appear to be waning in the near-term. The more devices school divisions add to their network, the greater the need for an increase in bandwidth, WAP, network personnel and other internal broadband equipment to support the devices.

Information Security

When school division technology directors were asked to rate their division on information security, 83 divisions or 63% rated themselves as being Proactive, while 19 divisions or 14% rated themselves as Very Proactive. Seventy- eight divisions, or 59% have an information security policy approved by the Superintendent while 49 divisions or 37% said they do not have a network security policy.

Forty-nine, or 37%, school divisions reported not having an information security policy.

School division technology leaders were asked how often they received an independent third party information security audit. Eighty-two divisions or 62% reported they had never had an audit, 11 divisions or 8% have an audit every year while 8 divisions or 6% have an audit every 2 years, 27 divisions or 21% have an audit every 2+ years. Eighty-two divisions or 62% reported they had never had a third party audit.

Respondents were asked what additional resources they would prioritize as the most important for information security. The findings show that 53 divisions or 40% need additional personnel to support information security, 35 divisions or 27% need additional training or professional development for current staff followed by external professional security consulting services at 14%. Fifty-three divisions reported a need for additional personnel to support information security.

The VDOE requested information from schools on the use of Single Sign On (SSO) technology. SSO refers to the technology for the user authentication process that allows access to multiple applications with one set of user credentials. Seventy-two divisions or 55% have a Single Sign on technology (SSO) in place while 56 school divisions or 42% do not. If a school division technology director responded yes to the question about having an SSO strategy, they were then asked to name their primary SSO provider. The results indicate that Microsoft Active Directory/Azure was the most widely implemented SSO strategy followed by Clever, Google, Other, and Enboard.

Internet Outside of School

Closing the "Homework Gap" for students should be a state level priority.

School technology leaders were asked to what extent a lack of access to outside-of-school Internet access is limiting your division's teaching and learning. Thirty-four divisions or 26% indicated that the lack of Internet access outside of school is Very limiting, sixty divisions responded that Internet outside of school is Somewhat limiting, thirty divisions said it was Slightly limiting, and eight divisions said that Internet outside of schools is Not at all limiting. Divisions are rising to the challenge of home access to the Internet. The most common approaches to provide solutions are free/subsidized home Internet access for low-income families participating in service provider-sponsored services, working with the community and businesses to provide Wi-Fi hotspots for students, and deploying division-owned Wi-Fi hotspots for students. The diversity of approaches suggests that the VDOE may want to help divisions facing similar challenges, and elevate emerging practices to benefit all divisions. In addition, the 66 divisions that currently do not have a strategy or program may benefit from learning about how other school divisions are implementing Internet access outside of school. Even so, school division funding for Internet outside of school may not be affordable. Additional data from the survey suggests that students primarily access the Internet and complete homework outside of school hours at home (65%). Twenty percent of students cannot access the Internet outside of school, 6% access the Internet at the public library, and 5% gain access to the school network after hours (e.g. high school library). In school divisions where one-to-one devices are taken home and Internet access is not available, some technology directors report student use of offline curriculum and instructional resources through Google Docs as a work around for lack of Internet.

Support for Digital Learning

School divisions were asked about the most important resources needed to support digital learning. The results show that leadership/planning support was the most important resource needed to support digital learning followed by professional development for teachers, and the need for instructional technology resource teachers.

Conclusion

In conclusion, almost all public school buildings in Virginia are connected to fiber and 122 divisions of 132 are exceeding the minimum bandwidth goal of 100 kbps per student. There is significant variability in the bandwidth needs of school divisions and there are several factors involved in assessing how much bandwidth is sufficient to support digital learning. School divisions will continue to upgrade their bandwidth every year as more computing devices are added to the network. There will also be more demands on school technology staff to manage and support the network. Some school divisions have the capacity to support complex school networks while others do not. Information security is a priority for school technology leaders and the results show a need for additional personnel to support the security of the network. While Virginia public school divisions are in a good position to support digital learning, more work remains on addressing the affordability of broadband, Wi-Fi implementation, the "Homework Gap," and information security.

Recommendations

Homework Gap

Closing the "Homework Gap" for students should be a state level priority.

The Chief Broadband Advisor for the state should convene key stakeholders to work on the "Homework Gap."

Broadband Data Collection Assistance

- Policymakers should assist the VDOE in improving the data collection, analysis, and reporting, of the annual KLIP Broadband Connectivity Capability survey. Funding of this data collection is needed in order to meet the General Assembly directive that school divisions report to the VDOE by November 1 of each year, the status of broadband connectivity capability of schools in the division.

Affordability

- To make Internet access more affordable for school divisions in rural areas and in geographical locations where there is only one service provider, the VDOE will collaborate with Internet service providers, the Chief Broadband Advisor, and other key stakeholders to drive down costs.

Network Engineering Expertise

- To provide schools with additional expertise to support an ever expanding and complex Wi-Fi network, policymakers should assist VDOE by providing funding for a statewide contract, full-time resources, or consultant, to assist school divisions in need of network engineering, evaluation, validation, and information security expertise.

Glossary of Terms

Bandwidth

In telecommunications, bandwidth is the width of a telecommunications channel. In digital communications, bandwidth is typically measured in bits per second (bps).

Category One

Schools can apply for E-rate funding for category one services and includes Internet access and data transport between school facilities. Discounts are provided as a percent of total eligible project costs

Category Two

Schools can apply for E-rate funding for internal connections/managed broadband services (Wi-Fi).

EducationSuperHighway

The EducationSuperHighway is the leading nonprofit focused on upgrading the Internet access in every public school classroom in America. They believe that digital learning has the potential to provide all students with equal access to educational opportunity and that every school requires high-speed broadband to make that opportunity a reality. Their work focuses on catalyzing federal and state action on K-12 broadband initiatives and accelerating upgrades in school districts by connecting them to competitive service provider options.

E-rate Modernization Order

The Federal Communications Commission (FCC) adopted the E-rate Modernization Order on July 11, 2014 The Order adopted in July takes major steps to modernize and streamline the schools and libraries universal service support program (more commonly known as the E-rate program) and focuses on expanding funding for Wi-Fi networks in elementary and secondary schools and libraries across America. Since its inception in 1997, the E-rate program has helped ensure that eligible schools and libraries have affordable access to the Internet. In modernizing the program, the Order seeks to ensure that the program is geared towards meeting the broadband needs of schools and libraries in today's world of interactive, individualized digital

learning.

Federal Communications Commission (FCC)

The FCC regulates interstate and international communications by radio, television, wire, satellite and cable in all 50 states, the District of Columbia and U.S. territories, The FCC is an independent U.S. government agency overseen by Congress, the commission is the United States' primary authority for communications law, regulation and technological innovation.

FCC Form 470

Posting of an applicant's FCC Form 470 (Description of Services Requested and Certification Form) opens the required competitive bidding process. After applicants certify an FCC Form 470 in the E-rate Productivity Center (EPC), it is posted publicly. Applicants can also issue a request for proposal (RFP) or related bidding document. Service providers can then review the posted FCC Form 470 information and submit bids.

FCC Form 471

The services ordered and certification form is an FCC Form that schools and libraries use to report services ordered and discounts requested for those services. This Form contains information on the rural or urban status of schools, the schools in the division receiving the services, discount rate calculations, funding requests, product and service details, cost calculations, and connectivity questions related to bandwidth speeds, connection type, and the sufficiency of Wi-Fi.

Gigabit per second (Gbps)

Gigabit per second (Gbps) is a unit of data transfer rate equal to: 1,000 megabits per second

"Homework Gap"

Children that do not have high-speed Internet access outside of the classroom, and are not able to complete homework and after-school assignments. The "Homework Gap" leaves these children at a measurable disadvantage compared to their more affluent peers, resulting in lower test scores, lower grades, and ultimately, lower graduation rates.

Information Security

Information security is the practice of preventing unauthorized access, use, disclosure, disruption, modification, inspection, recording or destruction of information. It is a general term that can be used

regardless of the form the data may take (e.g., electronic, physical). Information security's primary focus is the balanced protection of the confidentiality, integrity and availability of data (also known as the CIA triad) while maintaining a focus on efficient policy implementation, all without hampering organization productivity.

Information Technology Audit

An information technology audit, or information systems audit, is an examination of the management controls within an Information technology (IT) infrastructure. The evaluation of obtained evidence determines if the information systems are safeguarding assets, maintaining data integrity, and operating effectively to achieve the organization's goals or objectives. These reviews may be performed in conjunction with a financial statement audit, internal audit, or other form of attestation engagement.

K-12 Learning Infrastructure Program (KLIP)

Launched in 2015, Virginia's K-12 Learning Infrastructure Program (KLIP) is a partnership between the Office of the Governor, VDOE, and the EducationSuperHighway. KLIP supports increased access to affordable, high-speed Internet in every classroom in Virginia.

Lowest Corresponding Price

The LCP is defined as the lowest price that a service provider charges to nonresidential customers who are similarly situated to a particular applicant (school, library, or consortium) for similar services. A similarly situated applicant is one that is located in the service provider's geographic service area." (CFR Part 54, Section 54.500).

Megabit per second (Mbps)

Megabit per second (Mbps) is a unit of data transfer rate equal to 1,000 kbps

Point of Presence

Point of presence (POP) is the point at which two or more different networks or communication devices build a connection with each other. POP mainly refers to an access point, location or facility that connects to and helps other devices establish a connection with the Internet.

Profile of a Virginia Graduate

The Profile of a Virginia Graduate describes the knowledge, skills, experiences, and attributes that students must attain to be successful in college and/or the work force and to be "life ready."

Second E-rate Modernization Order

The Federal Communications Commission (FCC) adopted the Second E-rate Modernization Order on December 11, 2014 The Order builds on actions taken by the Commission in July to modernize and streamline the schools and libraries universal service support program, known as the E-rate program. In this Order, the Commission aims to ensure that all schools and libraries have access to high-speed connectivity and increases the E-rate program spending cap to adequately support that connectivity. The actions taken in this Order are the critical next step toward meeting the program goals and connectivity targets the Commission adopted in July's E-rate Modernization Order.

Self-Provisioned Network

Complete applicant ownership of a high-speed broadband network. The applicant hires a vendor to construct the network or a portion of the network, and thereafter owns and maintains that network or portion.

State Education Technology Directors Association (SETDA)

The State Education Technology Directors Association (SETDA) is a 501(c) 3 not-for-profit membership association launched by state education agency leaders in 2001 to serve, support and represent their emerging interests and needs with respect to the use of technology for teaching, learning, and school operations.

Universal Service Administrative Company (USAC)

The Universal Service Administrative Company (USAC) is an independent, not-for-profit corporation designated by the FCC to protect the integrity of universal service through informing and educating program audiences, collecting and distributing contributions, and ensuring program compliance. USAC administers the E-rate program, including operating the application process, reviewing applications, conducting audits, and providing technical support to state and district E-rate coordinators. Services are published annually in the "Eligible Services List".

Virginia Public School Authority (VPSA)

VPSA distributes funds that E-Rate eligible schools can use as state match funding for special construction. Funds can be utilized to support infrastructure projects that will provide high-speed Internet access to eligible schools. The Virginia Department of Education is required to authorize allocations of $72,660,000 to the VPSA for education technology grants for fiscal years 2017 and 2018.

Wireless Access Points (WAP)

A wireless access point (WAP) is a hardware device or configured node on a local area network (LAN) that allows wireless capable devices and wired networks to connect through a wireless standard, including Wi-Fi or Bluetooth. WAPs feature radio transmitters and antennae, which facilitate connectivity between devices and the Internet or a network. A WAP is also known as a hotspot.

Appendix A

Survey Questions

Q1.The information collected in this survey will be used by the DOE to better understand the Virginia public school technology landscape and determine opportunities for funding. The results will be posted on theV DOE website. You will receive a copy of your responses once you complete the survey. There may be other staff in your division that will need to answer some of the questions related to digital learning. You may want to share the questions with them and solicit their response before you complete the survey. One person in the division should complete the survey, which will take approximately 15 minutes to complete. Thank you for your time.

Q2. Are each of the school buildings in your division connected to fiber?
Yes
No

Q3. Where schools are not on fiber, please include the school name and connection type they receive.
Non-fiber connection types may include DSL, cable modem, T1, T3, microwave/fixed wireless, and satellite.

Q4. Which answer best describes how your Internet is procured?
One Internet Service Provider ISP company supplies both Internet Access (IA) and the transport circuit from the ISP to the division
One Internet Service Provider ISP company supplies Internet Access (IA) and a different ISP company supplies the transport circuit from the ISP to the division
One Internet Service Provider ISP company supplies Internet Access (IA) only, while the transport circuit from the ISP to the district is owned by the division or municipality

Q5. Please enter the name of the Internet Service Provider(s) (ISP) and the total Internet Access (IA) bandwidth supplied. *Please enter your answer in Megabit per second (Mbps). For a 3 Gbps connection enter 3,000.* Internet Access (IA) and transport circuit to district Service Provider(s) Name Bandwidth (Mbps).

Q6. Please enter the names of your Internet Service Providers (ISP) and bandwidth supplied for the Internet Access (IA) and transport services. *Please enter your answer in Megabit per second (Mbps). For a 3 Gbps connection enter 3,000.*
One Internet Service Provider ®ISP© company supplies both Internet Access (IA) and the transport circuit from the ISP to the division
One Internet Service Provider ISP company supplies Internet Access (IA) and a different ISP company supplies the transport circuit from the ISP to the division

One Internet Service Provider ISP company supplies Internet Access (IA) only, while the transport circuit from the ISP to the district is owned by the division or municipality
Service Provider Name Bandwidth (Mbps)
Internet Access (IA)
Transport from ISP to Division

Q7. Please enter the name of the Internet Service Provider(s) (ISP) and Internet Access (IA) bandwidth supplied. *Please enter your answer in Megabit per second (Mbps).* For a 3 Gbps connection enter 3,000. Service Provider Name Bandwidth (Mbps) Internet Access (IA).

Q8. Which answer best describes your network architecture?
Internet enters at one location in the district and then is distributed to each school building by transport WAN
Each school building is connected to the Internet by their own direct Internet circuit.
There are no transport WAN circuits between the school buildings
Other (please explain)

Q9. Which answer best describes how the transport Wide Area Network (WAN) circuits between school campuses are procured?
The transport WAN circuits are leased from a service provider
The transport WAN circuits are self- provisioned and there is no monthly cost
The transport WAN circuits are leased for some school buildings and owned by the division or municipality for other school buildings
There are no transport WAN circuits between school buildings

Q10.Have you sought an Internet upgrade in the last year, but been unable to afford the price you were quoted?
Yes
No
Other (please explain)

Q11. Do you plan to upgrade your Internet access in the next 12 months?
Yes
No

Q12. Do you plan to upgrade your WAN in the next 12 months?
Yes
No

Q13. In the school buildings in your division with the poorest
Wi-Fi connectivity, please rate how sufficient the WiFi is for your daily needs.
Completely
Mostly
Sometimes
Never

Not Applicable

Q14. You have selected that your Wi-Fi is not completely sufficient. Please describe the impact of the problem (schools, grades or students affected), and what you would need to solve it.

Q15. What is the total number of classrooms in your division? (including mobile units)

Q16. What is the total number of Wi-Fi Access Points (AP) that will be installed in your division's classrooms by September 1, 2017? This includes Aps currently installed and any Aps that have been procured recently and will be installed this summer.

Q17. What are the most significant barriers to increasing connectivity in your school division? Please select all that apply.
Internet provider at capacity and cannot provide more bandwidth
Lack of Internet providers in the area
Lack of competitive pricing due to few providers
Transport connection type is at capacity and must be replaced (e.g we have copper vs. fiber connections)
Cannot afford bids for capital/upfront, nonrecurring expenses
Cannot afford bids for the monthly recurring costs
Wide Area Network (WAN) transport between buildings
Poor/lacking wireless network capability
Poor LAN infrastructure (switches, routers, wiring) capability
Additional division personal
Additional training or professional development for current staff
External professional technical/consulting services
No barriers to increasing connectivity at any point on the network
Other (please explain)

Q18. By September 1, 2017 what devices will your division provide for use by Students? Hewlett Packard, Lenovo, Google, IBM, or Other

Q19. If other, please indicate the manufacturer. *For example Dell Chromebooks; Asus, Laptops.*

Q20. Approximately how many of each device will be in use in your division by September 1, 2017?
Number of devices
Chromebooks
Tablets
Laptops
Smart Phones

Q21. Are you planning on buying additional devices in the next 12 months?

Yes
No

Q22. If yes, approximately how many devices do you plan to purchase in the next 12 months? Example 50 Dell Chromebooks.

Q23.Indicate which of the following practices for student learning your division *follows* (check all that apply)
Blended learning
Personalized learning
Mastery based learning
Project based learning
Anywhere, anytime learning
Distance education
Digital citizenship
College & career readiness
Technology skills
1:1 based learning
Open Educational
Resources (OER)

Q24.If you indicated 1:1 based learning is available or in your division's vision, please indicate the scope of your implementation:
Division-wide
School-wide
Grade level
Program based

Q25. What are the most important resources you need to support digital learning in your school division? Drag and drop this list to order from 1 (most important) to 8 (least important)
Instructional support
Instructional Technology Resource Teachers
Professional development
Devices
Digital curriculum and content
Improved Internet/Wi-Fi connectivity
Leadership/planning support
Other (please explain)

Q26. Do you have a network security policy approved by the superintendent?
Yes
No

Q27. How would you rate your division on network security?
Very proactive
Proactive
Neither proactive nor reactive
Reactive
Very reactive
Don’t know

Q28. How often does your division receive an independent third party network security audit?
Every year
Every 2 years
Every 2+ years
Never had an audit

Q29. What additional resources would you prioritize as important for network security? Drag and drop this list to order from 1 (most important) to 6 (least important)
External professional security consulting services
Additional Personnel
Additional training or professional development for current staff
Hardware
Software

Q30. Does your school division have a Single-Sign On (SSO) strategy at the division level that authenticates teachers, administrators, students, parents, and other support personnel against applications?
Yes
No

Q31. If yes, who is your primary SSO provider?
Clever
Enboard from Encore
Google
MS Active Directory/Azure
School Messenger

Q32. To the best of your knowledge, where do students primarily access the Internet and complete homework outside of school hours? Percentage of student body
At home
Public library
Cannot access the Internet out of school
After hours school network
Other

Q33. To what extent is a lack of access to outside of school Internet access limiting your division's teaching and learning?
Very limiting
Somewhat limiting
Slightly limiting
Not at all limiting

Q34. Which, if any, of the following are among your division's strategies for increasing access outside of school hours? Select all that apply:
Currently do not have a strategy or program
Free/subsidized home access for low-income families
Provide free/subsidized division sponsored wireless access to homes and the community
Promote Lifeline program
Participate in provider sponsored services
Work with the community/businesses to provide WiFi hot spots for students
Deploy division-owned Wi-Fi hotspots for students
Provide filtered Smart Phones
Provide loaner hot spots
Other (please explain)

Q35. What are some of the things that you are excited to see taking place in the classroom that you'd like state leaders to know about? If you wish to share any narrative related to your division's use of technology to advance student learning, please do include any highlights, links, etc.

Q36. This is the final question. Anything else you'd like to share?

Q37. You're done! You will be emailed a copy of your responses shortly. Thank you for your time.

https://www.healthcareitnews.com/news/ballad-health-launches-epic-virtual-roll-out-across-its-4-state-system

Ballad Health launches Epic with virtual rollout across its 4-state system

Epic worked with the health system to deploy the electronic health record virtually, in response to enduring travel and social distancing restrictions around COVID-19.

By Kat Jercich
June 15, 2020
03:11 PM

Ballad Health, a healthcare system spanning four states in Appalachia, announced that it had deployed Epic to operate its electronic health records system.

The move targeted physician practices that had been part of Mountain States Health Alliance, which merged with Wellmont Health System in 2018 to form Ballad Health. Wellmont Health System has been using Epic since 2014.

"When Ballad Health launched in 2018, we knew having a single EHR would be crucial for our patients' safety, efficiency and convenience," said Pam Austin, Ballad Health's chief information officer, in a statement.

WHY IT MATTERS

Ballad representatives pointed to interoperability as a deciding factor for moving to deploy Epic across the hospital system, noting the benefits to patient safety and finances when providers can view and manage health records at every step of care.

"We are committed to enhancing care for the communities we serve, and with the launch in the physician practices, our care teams – regardless of their legacy health system – will be able to collaborate more effectively to provide the care patients need," said Austin.

"Most importantly, this transition will allow for better interoperability throughout the Appalachian Highlands, benefiting patients through a seamless, integrated approach," Austin continued.

The Epic ambulatory launch marked a stepping-stone in Ballad Health's journey to upgrade its overall computing infrastructure, which includes replacing 10,000 computers and converting all users to Windows 10, according to the company.

Epic is already in use at eight of Ballad's hospitals; by October, the system said, it will be deployed at the remaining 13.

"With Epic now live in most of our Ballad Health Medical Associates practices, we're one – major – step closer to bringing our health system onto a single patient record platform," said Alan Levine, chairman and chief executive officer of Ballad Health, in the statement.

THE LARGER TREND

Ballad is among several health systems to have pivoted to virtual EHR implementations amid restrictions from the COVID-19 pandemic.

In May, EHR vendor Cerner launched its first-ever "virtual go-live" at Macon Community Hospital, a 25-bed critical access hospital in rural Tennessee.

"Considering social distancing and safety precautions related to COVID-19, our options were to delay our implementation or work to complete the process virtually," said Thomas Kidd, Macon Community Hospital CEO.

Given the continued emphasis on social distancing measures, it's important to note that Epic recently launched a telehealth service through Twilio, allowing providers to launch video visits within EHR workflows – although telehealth may be less accessible for rural patients without broadband access.

ON THE RECORD

"This has been a long time coming, and many people have put in an incredible amount of work to plan, prepare and execute," said Barbara Allen, chair of the Board of Directors Information Technology Committee at Ballad, about the launch.

"Our patients and communities will benefit from industry-leading technology providing incredible power to consumers to have more control over their health care and unprecedented access to their care teams," Allen said.

https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/schools.html#anchor_1589932065842

COMMUNITY, WORK & SCHOOL

Considerations for Schools

Operating Schools During COVID-19

Updated May 19, 2020

Maintaining Healthy Operations

Schools may consider implementing several strategies to maintain healthy operations.

- **Protections for Staff and Children at Higher Risk for Severe Illness from COVID-19**
  - Offer options for staff at higher risk for severe illness that limit their exposure risk (e.g., telework, modified job responsibilities).
  - Offer options for students at higher risk of severe illness that limit their exposure risk (e.g., virtual learning opportunities).
  - Consistent with applicable law, put in place policies to protect the privacy of people at higher risk for severe illness regarding underlying medical conditions.

- **Regulatory Awareness**
  - Be aware of local or state regulatory agency policies related to group gatherings to determine if events can be held.

- **Gatherings, Visitors, and Field Trips**
  - Pursue virtual group events, gatherings, or meetings, if possible, and promote social distancing of at least 6 feet between people if events are held. Limit group size to the extent possible.
  - Limit any nonessential visitors, volunteers, and activities involving external groups or organizations as possible – especially with individuals who are not from the local geographic area (e.g., community, town, city, county).
  - Pursue virtual activities and events in lieu of field trips, student assemblies, special performances, school-wide parent meetings, and spirit nights, as possible.
  - Pursue options to convene sporting events and participation in sports activities in ways that minimizes the risk of transmission of COVID-19 to players, families, coaches, and communities.

- **Identifying Small Groups and Keeping Them Together (Cohorting)**
  - Ensure that student and staff groupings are as static as possible by having the same group of children stay with the same staff (all day for young children, and as much as possible for older children).
  - Limit mixing between groups if possible.

- **Staggered Scheduling**
  - Stagger arrival and drop-off times or locations by cohort or put in place other protocols to limit contact between cohorts and direct contact with parents as much as possible.

- When possible, use flexible worksites (e.g., telework) and flexible work hours (e.g., staggered shifts) to help establish policies and practices for social distancing (maintaining distance of approximately 6 feet) between employees and others, especially if social distancing is recommended by state and local health authorities.

- **Designated COVID-19 Point of Contact**
  - Designate a staff person to be responsible for responding to COVID-19 concerns (e.g., school nurse). All school staff and families should know who this person is and how to contact them.

- **Participation in Community Response Efforts**
  - Consider participating with local authorities in broader COVID-19 community response efforts (e.g., sitting on community response committees).

- **Communication Systems**
  - Put systems in place for:
    - Consistent with applicable law and privacy policies, having staff and families self-report to the school if they or their student have symptoms of COVID-19, a positive test for COVID-19, or were exposed to someone with COVID-19 within the last 14 days in accordance with health information sharing regulations for COVID-19external icon (e.g. see "Notify Health Officials and Close Contacts" in the **Preparing for When Someone Gets Sick section below**) and other applicable federal and state laws and regulations relating to privacy and confidentiality, such as the Family Educational Rights and Privacy Act (FERPA).
    - Notifying staff, families, and the public of school closures and any restrictions in place to limit COVID-19 exposure (e.g., limited hours of operation).

- **Leave (Time Off) Policies and Excused Absence Policies**
  - Implement flexible sick leave policies and practices that enable staff to stay home when they are sick, have been exposed, or caring for someone who is sick.
    - Examine and revise policies for leave, telework, and employee compensation.
    - Leave policies should be flexible and not punish people for taking time off, and should allow sick employees to stay home and away from co-workers. Leave policies should also account for employees who need to stay home with their children if there are school or childcare closures, or to care for sick family members.
  - Develop policies for return-to-school after COVID-19 illness. CDC's criteria to discontinue home isolation and quarantine can inform these policies.

- **Back-Up Staffing Plan**
  - Monitor absenteeism of students and employees, cross-train staff, and create a roster of trained back-up staff.

- **Staff Training**
  - Train staff on all safety protocols.
  - Conduct training virtually or ensure that social distancing is maintained during training.

- **Recognize Signs and Symptoms**
  - If feasible, conduct daily health checks (e.g., temperature screening and/or or symptom checking) of staff and students.
  - Health checks should be conducted safely and respectfully, and in accordance with any applicable privacy laws and regulations. School administrators may use examples of screening methods in CDC's supplemental Guidance for Child Care Programs that

Remain Open as a guide for screening children and CDC's General Business FAQs for screening staff.

- **Sharing Facilities**
  - Encourage any organizations that share or use the school facilities to also follow these considerations.

- **Support Coping and Resilience**
  - Encourage employees and students to take breaks from watching, reading, or listening to news stories about COVID-19, including social media if they are feeling overwhelmed or distressed.
  - Promote employees and students eating healthy, exercising, getting sleep, and finding time to unwind.
  - Encourage employees and students to talk with people they trust about their concerns and how they are feeling.
  - Consider posting signages for the national distress hotline: 1-800-985-5990, or text TalkWithUsto 66746

https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html
HEALTHCARE WORKERS
Using Telehealth to Expand Access to Essential Health Services during the COVID-19 Pandemic
Updated June 10, 2020

Purpose of this Guidance

To describe the landscape of telehealth services and provide considerations for healthcare systems, practices, and providers using telehealth services to provide virtual care during and beyond the COVID-19 pandemic.

Background

Changes in the way that health care is delivered during this pandemic are needed to reduce staff exposure to ill persons, preserve personal protective equipment (PPE), and minimize the impact of patient surges on facilities. Healthcare systems have had to adjust the way they triage, evaluate, and care for patients using methods that do not rely on in-person services. Telehealth services help provide necessary care to patients while minimizing the transmission risk of SARS-CoV-2, the virus that causes COVID-19, to healthcare personnel (HCP) and patients.
While telehealth technology and its use are not new, widespread adoption among HCP and patients beyond simple telephone correspondence has been relatively slow.[1,2] Before the COVID-19 pandemic, trends show some increased interest in use of telehealth services by both HCP and patients.[3,4,5] However, recent policy changes during the COVID-19 pandemic have reduced barriers to telehealth access and have promoted the use of telehealth as a way to deliver acute, chronic, primary and specialty care.[6] Many professional medical societies endorse telehealth services and provide guidance for medical practice in this evolving landscape.[7,8,9] Telehealth can also improve patient health outcomes.[10]

Telehealth Modalities

Several telehealth modalities allow HCP and patients to connect using technology to deliver health care:

- **Synchronous**: This includes real-time telephone or live audio-video interaction typically with a patient using a smartphone, tablet, or computer.
    - In some cases, peripheral medical equipment (e.g., digital stethoscopes, otoscopes, ultrasounds) can be used by another HCP (e.g., nurse, medical assistant) physically with the patient, while the consulting medical provider conducts a remote evaluation.
- **Asynchronous:** This includes “store and forward” technology where messages, images, or data are collected at one point in time and interpreted or responded to later. Patient portals can facilitate this type of communication between provider and patient through secure messaging.
- **Remote patient monitoring:** This allows direct transmission of a patient’s clinical measurements from a distance (may or may not be in real time) to their healthcare provider.

Benefits and Potential Uses of Telehealth

Telehealth services can facilitate public health mitigation strategies during this pandemic by increasing social distancing. These services can be a safer option for HCP and patients by reducing potential infectious exposures. They can reduce the strain on healthcare systems by minimizing the surge of patient demand on facilities and reduce the use of PPE by healthcare providers.
Maintaining continuity of care to the extent possible can avoid additional negative consequences from delayed preventive, chronic, or routine care. Remote access to healthcare services may increase participation for those who are medically or socially vulnerable or who do not have ready access to providers. Remote access can also help preserve the patient-provider relationship at times when an in-person visit is not practical or feasible. Telehealth services can be used to:

- Screen patients who may have symptoms of COVID-19 and refer as appropriate

- Provide low-risk urgent care for non-COVID-19 conditions, identify those persons who may need additional medical consultation or assessment, and refer as appropriate
- Access primary care providers and specialists, including mental and behavioral health, for chronic health conditions and medication management
- Provide coaching and support for patients managing chronic health conditions, including weight management and nutrition counseling
- Participate in physical therapy, occupational therapy, and other modalities as a hybrid approach to in-person care for optimal health
- Monitor clinical signs of certain chronic medical conditions (e.g., blood pressure, blood glucose, other remote assessments)
- Engage in case management for patients who have difficulty accessing care (e.g., those who live in very rural settings, older adults, those with limited mobility)
- Follow up with patients after hospitalization
- Deliver advance care planning and counseling to patients and caregivers to document preferences if a life-threatening event or medical crisis occurs
- Provide non-emergent care to residents in long-term care facilities
- Provide education and training for HCP through peer-to-peer professional medical consultations (inpatient or outpatient) that are not locally available, particularly in rural areas

Strategies to Increase Telehealth Uptake

- Promote and optimize the use of telehealth services for the safety of HCP and patients while using the Framework for Healthcare Systems Providing Non-COVID-19 Clinical Care to determine when in-person care is appropriate. Include options for language interpretation, as needed.
- Communicate with insurers/payers to understand availability of covered telehealth, telemedicine, or nurse advice line services
- Use tele-triage methods for assessing and caring for all patients to decrease the volume of persons seeking care in facilities, especially during times of high transmission of contagious diseases such as COVID-19
- Provide outreach to patients with limited technology and connectivity and offer flexibility in platforms that can be used for video consultation, or non-video options, when possible

Telehealth Reimbursement

Insurance payers and HCP professional associations have supported the transition to telehealth services during the pandemic. The Centers for Medicare & Medicaid Services (CMS) issued multiple waiverspdf iconexternal icon, providing flexibility (e.g., geographic location, type of health site) during the pandemic and granting payment parity between telehealth and in-person clinical care for Medicare.[11] Medicaid programsexternal icon are administered at the state level and states can choose whether or not to cover telehealth services as an alternative to traditional in-person methods of care.

Safeguards for Telehealth Services

- Understand individual federal and state regulations and restrictions, temporary mandates and directives, and expiration dates
    - Monitor for updated regulatory actions for healthcare systems and HCP
    - Regional systems that provide services in multiple states must be particularly attentive to individual state requirements
    - HCP should track eligibility criteria based on their specific profession
- Maintain awareness of the Office for Civil Rights (OCR) announcements related to HIPAA and COVID-19external icon
- Train providers and staff on policies, practices, and protocols for using telehealth services, including appointment scheduling, documentation and billing, referral processes for specialty care, urgent and emergent care, laboratory services, pharmacy prescriptions, medical equipment, and follow-up visits

- Explore the use of telehealth services in all parts of the healthcare delivery system including FQHCs (federally qualified health centers)external icon, community clinics, pharmacies, and school-based health centersexternal icon

Potential Limitations of Telehealth

- Interstate licensure challenges and other regulatory issues that may vary by state
- Situations in which in-person visits are more appropriate due to urgency, underlying health conditions, or inability to perform an adequate physical exam
- The need to address sensitive topics, especially if there is patient discomfort or concern for privacy
- Limited access to technological devices (e.g., smartphone, tablet, computer) needed for a telehealth visit or connectivity issues
- Level of comfort with technology for HCP and patients
- Cultural acceptance of conducting virtual visits in lieu of in-person visits by HCP and patients

https://www.cms.gov/newsroom/press-releases/medicare-finalizes-new-rule-telemedicine-services-keep-beneficiaries-rural

MEDICARE FINALIZES A NEW RULE FOR TELEMEDICINE SERVICES TO KEEP BENEFICIARIES IN RURAL

May 02, 2011

MEDICARE FINALIZES A NEW RULE FOR TELEMEDICINE SERVICES TO KEEP BENEFICIARIES IN RURAL
AND REMOTE AREAS DIALED IN THROUGH TELEMEDICINE

The Centers for Medicare & Medicaid Services (CMS) today announced that it has finalized a rule for telemedicine services to ensure that patients in rural or remote areas will continue to receive the most cutting-edge medical care from many of their local hospitals.

The final rule changes the process that hospitals and critical access hospitals (CAH) can use for credentialing and granting privileges to physicians and practitioners who deliver care through telemedicine. Specifically, the rule simplifies how hospitals and CAHs partner with hospitals and non-hospital telemedicine entities (such as teleradiology facilities) to deliver care to their patients. The streamlined process will be particularly beneficial to patients of small hospitals and CAHs in rural or remote areas that may lack staff or resources to deliver specialized clinical expertise to their patient populations.

“Today’s final rule is the result of close collaboration with hospital and telemedicine care experts,” said CMS Administrator Donald M. Berwick, MD. “We at CMS want to be sure that as we develop rules to protect the safety and quality of care at America ’s hospitals and CAHs, we also devise policies that reflect the most innovative practices in delivering care to all patients, especially patients in rural or remote parts of the country through telemedicine practices.”

Before today’s final rule, CMS regulations required hospitals and CAHs to grant practice privileges to remote-site doctors and other practitioners already credentialed in distant-site facilities, after their own individualized consideration of the practitioner’s qualifications, on a practitioner-by-practitioner basis. This meant that these practitioners could not provide care via telemedicine unless they were granted practice privileges both by their home hospital as well as by the remote hospital or CAH to which the telemedicine services were being delivered.

Privileging decisions are currently made based upon the recommendations of a hospital’s staff after the staff has thoroughly examined and verified the credentials of the practitioners and also used specific criteria to determine whether privileges should be granted.

As part of credentialing, hospitals research the qualifications of licensed healthcare professionals and assure that these qualifications are appropriate and legitimate. Privileging considers a practitioner’s credentials, including a license or ability to legally practice in a state, the practitioner’s training and experience, any special certifications the individual may hold from a medical specialty board, as well as the individual’s clinical skills and abilities.

The final rule aims to reduce the burden of the traditional credentialing and privileging process for Medicare-participating hospitals and CAHs, both those that provide telemedicine services and those that use such services. In particular, the rule extends the option of a streamlined credentialing and privileging process to those small hospitals and CAHs that use the telemedicine services of practitioners from distant-site telemedicine entities, both Medicare- and non-Medicare-participating, in order to improve access to specialty services for patients while further reducing the regulatory burden imposed on hospitals and CAHs.

A hospital or CAH that furnishes telemedicine services to its patients via an agreement with a “distant” hospital or telemedicine entity may now rely upon information furnished by the distant hospital (often a larger medical center) or telemedicine entity when making credentialing and privileging decisions for the physicians and practitioners at the distant site that will furnish the services.

Telemedicine is the use of electronic information and telecommunications technologies to provide professional health care services. Telemedicine is often used to connect practitioners and clinical experts in large hospitals or academic medical centers with patients in smaller hospitals or CAHs, which are typically located in more remote locations. Telemedicine can assure that these remotely located patients enjoy the same access to potentially life-saving technologies and expertise that are available to patients in more populated parts of the country.

The final rule was developed in response to concerns about the urgent need to preserve access to telemedicine for patients.

Today’s final rule updates the conditions of participation for hospitals and CAHs. Conditions of participation are rules that apply to health care organizations that seek to begin and continue participating in the Medicare and Medicaid programs. The conditions are the baseline health and safety standards and are the foundation for improving quality and protecting the health and safety of beneficiaries. CMS implements these standards through state departments of health and accrediting organizations recognized by CMS (through a process called "deeming"), which review provider practices to assure they meet or exceed Medicare’s condition standards.

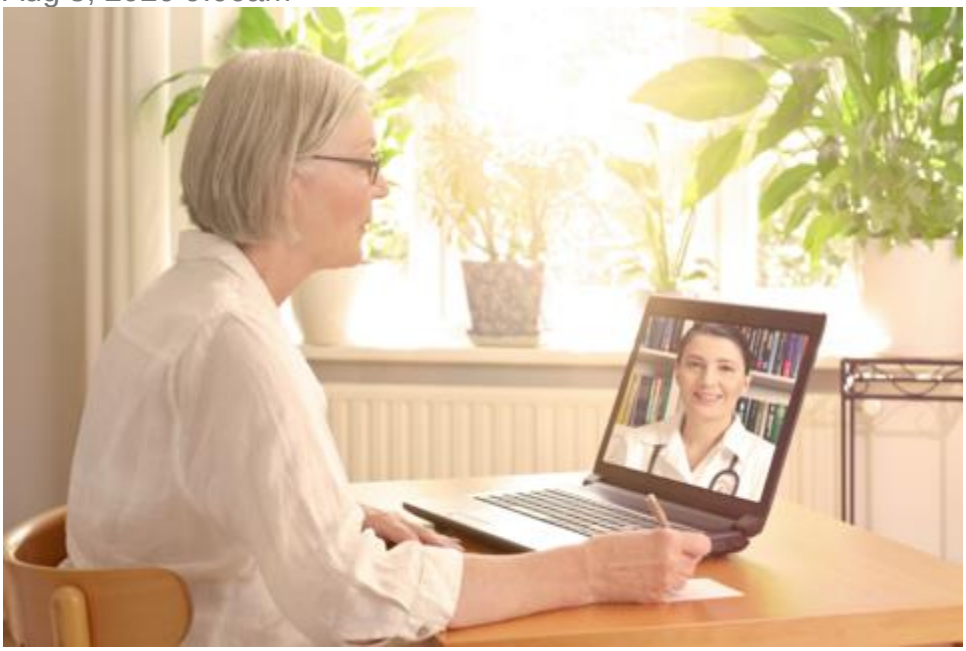
More information about the finalized rule is available on CMS’ website at **http://www.cms.gov/CFCsAndCoPs/06_Hospitals.asp** and http://www.cms.gov/CFCsAndCoPs/03_CAHs.asp.

https://www.fiercehealthcare.com/tech/from-telehealth-visits-to-digital-pharmacies-seniors-have-ramped-up-technology-use-during

Tech

From telehealth visits to digital pharmacies, seniors have ramped up technology use during COVID-19: survey

by
Heather Landi |
Aug 5, 2020 9:00am



Prior to COVID-19 only 1 in 10 seniors used telemedicine. During COVID-19, 44% have used telemedicine and 43% say they intend on using it after, the survey found. (Agenturfotografin/Shutterstock)

Seniors have embraced technology during the COVID-19 pandemic, from booking virtual visits with their doctors to ordering their prescriptions online.

Telemedicine usage jumped 340% among Medicare-eligible seniors since the start of the COVID-19 pandemic, according to a new survey.

Nearly one-third of consumers age 64 and older say they monitor their health using a wearable. What's more, 4 in 10 are interested in a wearable that helps them and those around them maintain appropriate social distance, according to the **survey** from healthinsurance.com.

The survey debunks the idea that only younger consumers widely use technology. Results were based on an online pool of more than 1,000 Medicare eligible consumers aged 64 and older conducted from July 17 to July 20.

Six in ten seniors say they are embracing technology more during the COVID-19 pandemic. One-third (34%) report using an online pharmacy.

Prior to COVID-19 only 1 in 10 used telemedicine. During COVID-19, 44% have used telemedicine and 43% say they intend on using it after, according to the survey.

Of those who used telemedicine, 58% say they have used it just once and 30% report using it once a month. Two-thirds of those who haven't tried telemedicine said the reason is simply because they haven't needed the service.

The survey results are in line with other polls that have found Medicare members are taking to telehealth.

A poll conducted by Morning Consult and sponsored by the Better Medicare Alliance back in May found that roughly half of seniors are comfortable using telehealth to get healthcare, and those that do largely say they had a favorable experience.

Data from insurance giant UnitedHealth also shows that the telehealth sector is making inroads with specific hard-to-reach demographics.

Telehealth adoption has **rapidly increased among seniors**, according to the company's data. And patients in rural areas also are gravitating toward telemedicine, according to John Walthour, vice president of research at UnitedHealth Group.

The Centers for Medicare and Medicaid Services (CMS) has reported that telehealth usage has surged in the past four months. Before the public health emergency, approximately 13,000 beneficiaries in fee-for-service Medicare received telemedicine in a week. In the last week of April, nearly 1.7 million beneficiaries received telehealth services, CMS data shows.

President Donald Trump issued an **executive order** Monday to permanently expand some telehealth services beyond the COVID-19 pandemic. Policy changes from CMS also support the increased use of telehealth among Medicare beneficiaries.

The healthinsurance.com survey also found that seniors are using online tools to research their healthcare options.

Nearly 8 in 10 research their Medicare options online. Forty-four percent enroll using the internet, and the remaining 56% sign up either in person or on the phone.

Healthcare costs are a top concern about seniors, the survey found. Two-thirds say they are worried about out-of-pocket medical costs. Six in ten are worried about an unexpected medical bill, so much so that 36% have put off seeing a doctor because of cost.

These concerns could impact how surveyed seniors vote in the upcoming 2020 presidential election.

Nine in ten say lowering drug prices is important to them and 68% say the economy and healthcare are the two most important issues to them in the 2020 election.

And, it turns out, certain behaviors are pretty universal during the COVID-19 pandemic as everyone is encouraged to stay home.

Case in point, almost half of seniors admit to binge-watching. And cheers to all the virtual happy hours—half of surveyed seniors also say they have video chatted more since the start of COVID-19.

For Immediate Release: June 9, 2020

Contacts: Office of the Governor: Alena Yarmosky, Alena.Yarmosky@governor.virginia.gov

Governor Northam Shares Guidance for Phased Reopening of PreK-12 Schools

Back to school plan informed by collaborative process, outlines steps for safely resuming in-person instruction and school activities

RICHMOND—Governor Ralph Northam today announced a phased approach that allows Virginia schools to slowly resume in-person classes for summer school and the coming academic year. The K-12 phased reopening plan was developed by the Office of the Secretary of Education, Virginia Department of Health, and the Virginia Department of Education and is informed by guidelines from the Centers for Disease Control and Prevention (CDC).

All PreK-12 schools in Virginia will be required to deliver new instruction to students for the 2020-2021 academic year, regardless of the operational status of school buildings. The PreK-12 guidance is aligned with the phases outlined in the Forward Virginia blueprint and provides opportunities for school divisions to begin offering in-person instruction to specific student groups.

"Closing our schools was a necessary step to mitigate the spread of COVID-19 and protect the health and safety of staff, students, and our communities," **said Governor Northam**. "Our schools have risen to the occasion and found ways to provide remote learning opportunities, keep students engaged, continue serving meals for children who otherwise would have gone hungry, and support students and families through an immensely challenging time. Resuming in-person instruction is a high priority, but we must do so in a safe, responsible, and equitable manner that minimizes the risk of exposure to the virus and meets the needs of the Virginia students who have been disproportionately impacted by lost classroom time."

The Virginia Department of Education (VDOE) convened numerous and diverse stakeholders through the Return to School Recovery Task Force, the Accreditation Task Force, and the Continuity for Learning Task Force this spring to inform strategies for reopening. Secretary of Education Atif Qarni held 35 strategy sessions with diverse groups of education stakeholders between May 29 and June 8 to gather their recommendations on how different reopening scenarios would impact their respective roles. The Secretary and his team engaged 800 individuals in these conversations, and heard from a wide range of perspectives including English language learners, parents of students with special needs, career and technical education centers, early childhood educators, students, school

nutrition workers, private school leaders, bus drivers, school psychologists, the Virginia High School League, counselors, nurses, and more.

"These plans are informed by a range of perspectives and will help ensure that we prioritize the social emotional well-being of all of our students, their families, and educators as we go back to school this summer and fall," **said Secretary Qarni**. "In-person learning is most essential for special education students, English language learners, young children, and other vulnerable students who depend upon the structure, in-person connection, and resources our school communities provide."

Local school divisions will have discretion on how to operationalize within each phase and may choose to offer more limited in-person options than the phase permits, if local public health conditions necessitate. Entry into each phase is dependent on public health gating criteria, corresponding with the Forward Virginia plan. School divisions will have flexibility to implement plans based on the needs of their localities, within the parameters of the Commonwealth's guidance.

The opportunities for in-person instruction in each phase are as follows:

- **Phase One:** special education programs and child care for working families
- **Phase Two:** Phase One plus preschool through third grade students, English learners, and summer camps in school buildings
- **Phase Three:** all students may receive in-person instruction as can be accommodated with strict social distancing measures in place, which may require alternative schedules that blend in-person and remote learning for students
- **Beyond Phase Three:** divisions will resume "new-normal" operations under future guidance

Beginning with Phase Two, local divisions and private schools must submit plans to the Virginia Department of Education that include policies and procedures for implementing Virginia Department of Health and CDC mitigation strategies. State Health Commissioner M. Norman Oliver, MD, MA has issued an Order of Public Health Emergency that requires all Virginia PreK-12 public and private schools to develop plans that demonstrate adherence to public health guidance. Public schools must also outline plans to offer new instruction to all students regardless of operational status.

Detailed information on each phase can be found in the guidance document available here.

VDOE has also developed comprehensive guidance to aid schools in planning for a return to in-person instruction and activities. "Recover, Redesign, Restart" can be found here.

"School will be open for all students next year, but instruction will look different," **said Superintendent of Public Instruction Dr. James Lane**. "The phased, hybrid approach allows PreK-12 students to have valuable class time and face-to-face interaction with their

peers, while prioritizing health and safety by ensuring physical distancing measures are maintained. This plan keeps equity at the forefront by giving divisions the opportunity to deliver in-person instruction to those who need it the most."

In every phase, PreK-12 schools must follow CDC Guidance for Schools, including social and physical distancing, enhanced health and hygiene procedures, cleaning and disinfecting measures, and other mitigation strategies. These precautions include, but are not limited to:

- Daily health screenings of students and staff
- Providing remote learning exceptions and teleworking for students and staff who are at a higher risk of severe illness
- The use of cloth face coverings by staff when at least six feet physical distancing cannot be maintained
- Encouraging the use of face coverings in students, as developmentally appropriate, in settings where physical distancing cannot be maintained

https://www.itnonline.com/content/telehealth-experience-massive-growth-due-covid-19

NEWS | **TELERADIOLOGY** | **MAY 13, 2020**

Telehealth to Experience Massive Growth Due to COVID-19

Demand for telehealth will soar by 64.3% in the U.S. in 2020 as the COVID-19 pandemic disrupts the practice of medicine and the delivery of healthcare

May 13, 2020 — Frost & Sullivan's recent analysis, **Telehealth—A Technology-Based Weapon in the War Against the Coronavirus, 2020**, finds that the demand for telehealth technology is expected to rise dramatically as the **COVID-19** pandemic continues to disrupt the practice of medicine and the delivery of healthcare worldwide. The telehealth market in the United States is estimated to display staggering seven-fold growth by 2025, resulting in a five-year compound annual growth rate (CAGR) of 38.2%. In 2020, the telehealth market is likely to experience a tsunami of growth, resulting in a year-over-year increase of 64.3%.

"The critical need for social distancing among physicians and patients will drive unprecedented demand for telehealth, which involves the use of communication systems and networks to enable either a synchronous or asynchronous session between the patient and provider," said **Victor Camlek**, Healthcare Principal Analyst at Frost & Sullivan. "However, all stakeholders need to remember that many people use the terms 'telehealth' or 'telemedicine' without understanding the ecosystem that is involved. This study will clarify the many components that are needed in order to implement telehealth."

Camlek added: "Across the market segments, virtual visits and remote patient monitoring (RPM) will propel the overall market of **telehealth**, followed by mHealth and personal emergency response systems (PERS)**.** Further, patients will benefit if data from RPM is fully available to virtual visit providers. This trend will demonstrate the benefit of integrated services. The trauma resulting from the COVID-19 crisis will lead to a clear growth opportunity for one-stop virtual visit and RPM solutions."

The opportunity for telehealth products and services to become a standard of care is growing. The challenge facing these technology and healthcare providers will focus on their ability to scale-up to this unprecedented demand. Growth in the **telehealth** space will be sustained beyond the COVID-19 pandemic for the vendors who can deliver:

- User-friendly sensors and remote diagnostic equipment that yield a high rate of successful patient outcomes following the telehealth experience.
- Practical applications of **artificial intelligence** (AI), Interactive Virtual Assistants (IVAs), and robotics that expand the telehealth deployment model.
- Deployment of **big data analytics** that can help researchers learn more about the way COVID-19 progresses among diverse patient populations.
- **Adherence to cybersecurity** and privacy regulations that avoid data breaches following the use of telehealth services.
- Measurable data that confirms the value of telehealth and influences regulatory agencies at the federal and state levels to extend all emergency waivers beyond the pandemic.

Watch the related **VIDEO: Telemedicine in Cardiology and Medical Imaging During COVID-19**
For more information: **www.frost.com**

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COVID-19 has caused a massive acceleration in the use of telehealth. Consumer adoption has skyrocketed, from 11 percent of US consumers using telehealth in 2019 to 46 percent of consumers now using telehealth to replace cancelled healthcare visits.[1] Providers have rapidly scaled offerings and are seeing 50 to 175 times[2] [3] [4] the number of patients via telehealth than they did before. Pre-COVID-19, the total annual revenues of US telehealth players were an estimated $3 billion, with the largest vendors focused in the "virtual urgent care" segment: helping consumers get on-demand instant telehealth visits with physicians (most likely, with a physician they have no relationship with).[5] With the acceleration of consumer and provider adoption of telehealth and extension of telehealth beyond virtual urgent care, up to $250 billion of current US healthcare spend could potentially be virtualized.[6]

Sidebar
Disclaimer

This shift is not inevitable. It will require new ways of working for a broad set of providers, step-change improvements in information exchange, and broadening access and integration of technology. The potential impact is improved convenience and access to care, better patient outcomes, and a more

efficient healthcare system. Healthcare players may consider moves now that support such a shift and improve their future position.

Telehealth has surged under COVID-19

Exhibit 1

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Many of these dynamics are likely to be in place for at least the next 12 to 18 months, as concerns about COVID-19 remain until a vaccine is widely available. During this period, consumers' preferences for care access will continue to evolve, and virtual health could become more deeply embedded into the care delivery system.

However, challenges remain. Our research indicates providers' concerns about telehealth include security, workflow integration, effectiveness compared with in-person visits, and the future for reimbursement.[7] Similarly, there is a gap between consumers' interest in telehealth (76 percent) and actual usage (46 percent). Factors such as lack of awareness of telehealth offerings, education on types of care needs that could be met virtually, and understanding of insurance coverage are some of the drivers of this gap.[8]

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We identified five models for virtual or virtually enabled non-acute care and analyzed the full potential of healthcare volume and spend that could be delivered this way. These models of virtual care have *increasing requirements to engage broader and broader portions of the healthcare delivery system*, going from offering one-off urgent visits, to building omnichannel care models that deliver a large portion of office visits virtually or near virtually, to embedding virtual services in home care models. They include:

1. On-demand virtual urgent care as an alternative to lower acuity emergency department (ED) visits, urgent care visits, and after-hours consultations. These care needs are the most common telehealth use cases today among payers. This allows a consumer to remotely consult on demand with an unknown provider to address immediate concerns (such as an acute sinusitis) and avoid a trip to the ED or an urgent care center. Such usage could be further scaled to address a larger portion of low acuity visits previously seen in EDs.

2. Virtual office visits with an established provider for consults that do not require physical exams or concurrent procedures. Such visits can be primary care (such as chronic condition checks, colds, minor skin conditions), behavioral health (such as virtual psychotherapy sessions), and some specialty care (select follow-up visits such as virtual cardiac rehabilitation). An omnichannel care model that fully leverages virtual visits includes a mix of telehealth and in-person care with a consistent set of providers, improving patient convenience, access, and continuity of care. This model also enables clinicians to better manage patients with chronic conditions, with the support of remote patient monitoring, digital therapeutics, and digital coaching, in addition to virtual visits.

3. Near-virtual office visits extend the opportunity for patients to conveniently

access care outside a provider's office, by combining virtual access to physician consults with "near home" sites for testing and immunizations, such as worksite clinics or retail clinics. For example, a virtual visit of a patient with flu or COVID-like symptoms could be followed up by a trip to a nearby retail clinic for a flu or COVID-19 test, with a subsequent follow-up virtual check-in with the primary care physician to consult on follow-on care.

4. Virtual home health services leverage virtual visits, remote monitoring, and digital patient engagement tools to enable some of these services to be delivered remotely, such as a portion of an evaluation, patient and care giver education, physical therapy, occupational therapy, and speech therapy. Direct services, such as wound care and assistance with daily living routines, would still occur in person, but virtual home health services could enhance the patient's and caregiver's experience, extend the reach of home health providers, and improve connectivity with the broader care team. For example, a physical therapist could conduct virtual sessions with elderly patients at their home to improve their strength, balance, and endurance, and to advise them how to avoid physical hazards to reduce risk of falls.

5. Tech-enabled home medication administration allows patients to shift receiving some infusible and injectable drugs from the clinic to the home. This shift can happen by leveraging remote monitoring to help manage patients and monitor symptoms, providing self-service tools for patient education (for example, training for self-administration), and providing telehealth oversight of staff (for example, an oncologist overseeing a nurse delivering chemotherapy to a patient at home and monitoring for side

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Our claims-based analysis suggests that approximately 20 percent of all emergency room visits could potentially be avoided via virtual urgent care offerings, 24 percent of healthcare office visits and outpatient volume could be delivered virtually, and an additional 9 percent "near-virtually." Furthermore, up to 35 percent of regular home health attendant services could be virtualized, and 2 percent of all outpatient volume could be shifted to the home setting, with tech-enabled medication administration. Overall, these changes add up to $250 billion in healthcare spend in 2020 that could be shifted to virtual or near-virtual care, or 20 percent of all office, outpatient, and home health spend across Medicare, Medicaid, and commercially insured populations.

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What changes need to happen to realize the full potential of telehealth?

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Scaling telehealth does more than alleviate patient and provider concerns over the next 12 to 18 months until a COVID-19 vaccine is available. Telehealth can increase access to necessary care in areas with shortages, such as behavioral health, improve the patient experience, and improve health outcomes. Fundamentally, the integration of fully virtual and near-virtual health solutions brings care closer to home, increasing the convenience for patients to access care when they need it and the likelihood that they will take the right steps to manage their care. These solutions can also make healthcare more efficient; evidence prior to COVID-19 shows that telehealth solutions deployed for chronic populations can improve total cost of care by 2 to 3 percent.[9] The actual

opportunity is likely greater once stakeholders embed telehealth as the new normal (for example, driven by improved abilities to manage chronic patients, potential increases in provider productivity).

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What actions should healthcare stakeholders take in the near term to shape this opportunity?

Actions payers could consider:

1. Define a value-backed virtual health roadmap, taking a data-driven view to prioritize interventions that will improve outcomes for priority populations, and develop strategies to digitally enable end-to-care care journeys.
2. Optimize provider networks and accelerate value-based contracting to incentivize telehealth. Define approaches (beyond the immediate COVID-19 response measures) to reimbursement and covered services, embed in contracting, and optimize networks and value-based models to include virtual health. Align incentives for using telehealth, particularly for chronic patients, with the shift to risk-based payment models.
3. Build virtual health into new product designs to meet changing consumer preferences and demand for lower-cost plans. This new design may include virtual-first networks, digital front-door features (for example, e-triage), seamless "plug and play" capabilities to offer innovative digital

solutions, and benefit coverage for at-home diagnostic kits.

4. Integrate virtual health into the care delivery approach. Given the significant disruptions to providers, payers are reassessing their role in care delivery—from ownership of care delivery assets, value-based contracting, or anything in between. Consider options in virtual health (for example, platforms, digital-first providers) as a critical element of this approach.

5. Reinforce the technology and analytics foundation that will be required to achieve the full potential of virtual health.

Actions health systems could consider:

1. Accelerate development of an overall consumer-integrated "front door." Consider what the integrated product will initially cover beyond what currently exists and integrate with what may have been put in place in response to COVID-19 (for example, e-triage, scheduling, clinic visits, record access).

2. Segment the patient populations (for example, with specific chronic disease) and specialties whose remote interactions could be scaled with home-based diagnostics and equipment.

3. Build the capabilities and incentives of the provider workforce to support virtual care (for example, workflow design, centralized scheduling, and continuing education); align benefit structure to drive adoption in line with health system and/or physician practice economics.

4. Measure the value of virtual care by quantifying clinical outcomes, access improvement, and patient/provider satisfaction to drive advocacy and contracting for continued expanded coverage. Include the potential value from telehealth when

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Actions investors and health services and technology firms could consider:

1. Develop scenarios on how virtual health will evolve and when, including how usage evolved post-COVID-19, based on expected consumer preferences, reimbursement, CMS, and other regulations.
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3. Develop potential options and define investment strategies based on the expected virtual health future (for example, combinations of existing players/platforms, linkages between in-person and virtual care offerings) and create sustainable value.
4. Identify the assets and capabilities to implement these options, including specific assets or capabilities to best enable the play, and business models that will deliver attractive returns.
5. Execute, execute, execute. The next normal will rapidly take hold, and those that can best anticipate its impact will create disproportionate value. Don't underestimate the potential of network effect.

Sidebar

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The window to act is now. The current crisis has demonstrated the relevance of telehealth and created an opening to modernize the care delivery system. This modernization will be achieved by embedding telehealth in the care continuum at scale. A $3 billion revenue market has the potential to grow to $250 billion. The seeds for success will be sown in the next few months during the COVID-19 crisis. Healthcare systems that come out ahead will be those who act decisively, invest to build capabilities at scale, work hard to rewire the care delivery model, and deliver distinctive high-quality care to consumers.

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Public health officials urge Americans to use telemedicine to help reduce the spread of coronavirus at doctors' offices and to ease the burden on hospitals. What is telemedicine and how do you use it?

RACHEL MARTIN, HOST:

So what are you supposed to do if you are showing the symptoms of coronavirus? The advice from health care providers is to call first - don't just show up at a hospital or your doctor's clinic. And because of that, we're seeing more virtual evaluations. Instead of sitting on an exam table, patients download an app and turn on the webcam. Here's NPR's Allison Aubrey.

ALLISON AUBREY, BYLINE: Last month, Sara Dehbashi (ph) traveled to Europe. She returned home to the Philadelphia area on February 23.

SARA DEHBASHI: Two days after, on February 25, I started feeling, like, sore throat, I had mild cough, nasal congestion.

AUBREY: She was concerned about coronavirus, so she called the emergency department at Jefferson Health. And one of the attending doctors recommended an online evaluation using the system's telemedicine program JeffConnect.

DEHBASHI: Basically, it's a simple app that we can download. And it asks some basic information.

AUBREY: Within an hour, she was face-to-face with a physician using an online platform. It's like being on FaceTime. There's video and audio.

DEHBASHI: So basically, he started asking questions about my symptoms and also where did I travel.

AUBREY: It may not seem as if a doctor could do much virtually, but emergency medicine physician Judd Hollander, who leads Jefferson Health's telemedicine efforts, says you'd be surprised.

JUDD HOLLANDER: So if I need to look in your throat, I get the phone positioned so I can look in your throat. I can clearly see that you're breathing well or not breathing well. I could see your respiratory rate. I could see whether you look to be well or look to be sick.

AUBREY: In the case of Sara Dehbashi, she was able to take her temperature and talk about her symptoms. They were able to rule out coronavirus, but doctors continued to monitor her symptoms and check in with her remotely for several days. Hollander says this is a success story for the patient and for the welfare of the community at large because, he says, telemedicine may help keep people out of emergency rooms and urgent care during this epidemic.

HOLLANDER: We want to keep people out 'cause we want to limit spread. That's the main goal.

AUBREY: He says, of course, when people need to be seen - say, if they're having trouble breathing and coronavirus is suspected - they'll be directed to come into the emergency department.

HOLLANDER: Because if we know you're coming at Jefferson, we bring you in through the back door into a biocontainment unit, put a mask on you and bring you back into your room with the least contact possible.

AUBREY: Hollander says more and more people are using the telemedicine program.

HOLLANDER: I mean, our telemedicine volume yesterday alone was double what it was a month ago.

AUBREY: Health care providers around the country are taking steps to improve access to telemedicine. For instance, Blue Cross Blue Shield companies say they'll encourage the use of virtual care and try to facilitate access. Sean O'Leary is an infectious disease expert at the University of Colorado. He says many health care systems have rolled out telemedicine programs.

SEAN O'LEARY: I think this pandemic is the perfect opportunity to really scale those up because the less we can keep people going in to the doctor, the less we're going to overburden the health care system and the less we're going to spread this virus.

MARTIN: That report by NPR's Allison Aubrey. Allison, that was so interesting. She's now in our studio to talk more about what we can all do to help stop the spread.

AUBREY: Good morning.

MARTIN: So let's talk more broadly about recent developments.

AUBREY: Sure.

MARTIN: The CDC has made this new recommendation about public gatherings. Fill us in.

AUBREY: Yes. The CDC says at gatherings of 50 or more people should be canceled or postponed for the next eight weeks, so that's through mid-May. And in addition to all the announcements from states and cities on restaurant closings, we're likely to hear more advice from the administration about social distancing. Anthony Fauci, the nation's top infectious disease adviser, said over the weekend, everyone needs to hunker down. And we expect to hear more details today.

MARTIN: Right. The White House is going to release this guidance.

AUBREY: That's right. Mmm hmm.

MARTIN: So lots of people have been asking how to protect the older members...

AUBREY: Right.

MARTIN: ...Of their family. What do you tell them? What's your advice?

AUBREY: You know, a lot of people don't like to hear this. My own mom didn't want to hear it at first either because it seemed so draconian. But given all the evidence that older people are more vulnerable, can die from this virus, it is prudent to keep young children away. So now is a good time, if you have children, to say to the grandparents or elderly family members, we don't come to your home; you don't come to ours temporarily.

Children who get the virus are only likely to have mild symptoms or none at all, but they could pass it on to an older person. I spoke to Shawn Morrison. He's a geriatrician at Mount Sinai Health System.

SHAWN MORRISON: This really is a public health crisis that is of a magnitude we haven't seen before. And if we all act as we know we should, we will get through this.

AUBREY: So think about FaceTime, maybe a drive-by visit. You know, remember this isn't forever.

MARTIN: Right. So as of today, there are going to be a whole lot of kids off from school at home, my kids included...

AUBREY: That's right.

MARTIN: I know Steve's, too. I mean, all of us.

AUBREY: Mine, as well.

MARTIN: So how does social isolation apply? I mean, can we do playdates, Allison? - she says desperately.

AUBREY: Well, social distancing may not mean complete isolation, but it does mean we have to take this seriously and be smart. So you may have heard this six feet rule - keeping six feet away from others. And at a playdate, think about that. Do you think it's possible to keep young kids six feet apart? I mean, that's a challenge. Older kids may be different.

There's no official guidance on playdates. No one is telling you, you must cancel a playdate. But I spoke to a pediatrician, Lindsay Thompson at the University of Florida. And she says, from her perspective, you'd rather be safe than sorry.

LINDSAY THOMPSON: I personally am taking a really strict line. I would say that playdates inherently have a risk. I don't know how big or small. But if we can put off for a few weeks and replace it with a little family time, it would all be better.

MARTIN: All right. So what do we do? Especially because you said we should keep kids away from older people - I mean, a lot of families rely on grandparents...

AUBREY: Right. That's right. Grandma cannot...

MARTIN: ...To help care for their kids.

AUBREY: ...Come in to take care as easily now, right?

MARTIN: So what do we do?

AUBREY: Well, you know, this is really hard. And obviously, it's going to differ situation by situation. But you know, if you're home with your kids and you're trying to work, encourage your kids to read, you know, the old-fashioned way. A pediatrician told me lots of parents will likely loosen screen time rules. I mean, that's just the reality here. I know I will have to. There's lots of instructional videos and games online. And kids need to move around and be active. So you know, go outside, ride bikes, go to the park. If you do, take that hand sanitizer. Wipe down afterwards.

MARTIN: All right. NPR's Allison Aubrey with some very useful guidance and tips. Allison, we appreciate this. I'm sure we'll be hearing from you.

AUBREY: OK. Thank you very much.

(SOUNDBITE OF JINSANG'S "INTROSPECT")

2021 Virginia Telecommunication Initiative (VATI)
Passing Form
Smyth, Washington, and Wythe Counties

Type of Passings	Total Number in Project Area	Number with Speeds at 10/1 or below in Project Area
Residential	6,172	Estimate: at least: 2846
Businesses (non-home based)	Estimate: 134	Estimate: at least: 22
Businesses (home-based)	Estimate: 118	Estimate: at least: 69
Community Anchors	25	Estimate: at least: 5
Non-residential	Estimate: 68	Estimate: at least: 33
Total Number of Passings	6,517	Estimate: at least: 2976

***Note**: The Total Number of Passings **MUST** be equal to the Residential, Business (non-home based), Non-residential and Community Anchors sum.*

Definitions

Passing – any structure that can receive service.
Business – An organization or entity that provides goods or services in order to generate profit. Businesses based in residential homes can count if they are a registered business (BPOL, LLC, etc.).
Community Anchor - schools, libraries, medical and health care providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by vulnerable populations, including low-income, unemployed, and the aged.
Non-Residential Passing – places of worship, federal, state, or local facilities or other potential customers that are neither a residence, business nor a community anchor as defined above.

ID	Task Mode	Task Name	Duration	Start	Finish
1		Phase 1 Mount Rogers	375 days	Wed 2/2/22	Tue 7/11/23
2		**Field Engineering**			
3		Field Data Collection	5 days	Wed 2/2/22	Tue 2/8/22
4		Site Survey	3 days	Tue 2/8/22	Thu 2/10/22
5		Premitting Applications	5 days	Thu 2/10/22	Wed 2/16/22
6		Pole Data	3 days	Thu 2/10/22	Mon 2/14/22
7		Make Ready Summary	1 day	Thu 2/10/22	Thu 2/10/22
8		Easements Identified	1 day	Tue 2/8/22	Tue 2/8/22
9					
10		**Facilities**			
11		Splice Package	1 day	Wed 2/2/22	Wed 2/2/22
12		Rainbows BOM	5 days	Mon 2/14/22	Fri 2/18/22
13		Estimate Workbook	1 day	Mon 2/14/22	Mon 2/14/22
14		Job Approval	1 day	Mon 2/14/22	Mon 2/14/22
15					
16		**Permits & Make-Ready**			
17		Permit Application & Invoicing	1 day	Wed 2/2/22	Wed 2/2/22
18		Towns or City Permit	0 days		
19		Make Ready Construction	1 day	Tue 2/8/22	Tue 2/8/22
20		AEP	1 day	Tue 2/8/22	Tue 2/8/22
21		Verizon	1 day	Tue 2/8/22	Tue 2/8/22
22		PVEC			
23		ODP			

Project: Phase 1 Mount Rogers
Date: Tue 8/11/20

Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
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Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

ID	Task Mode	Task Name	Duration	Start	Finish
24					
25		**Construction Task**			
26		Review Job Package	1 day	Mon 2/14/22	Mon 2/14/22
27		Assigned Contractor	1 day	Mon 2/14/22	Mon 2/14/22
28		Create PO	0 days		
29		Stage Job Materials	1 day	Wed 1/5/22	Wed 1/5/22
30		Materials Requested	1 day	Mon 2/14/22	Mon 2/14/22
31		Consturction Start/Finish	375 days	Wed 2/2/22	Tue 7/11/23
32		Make Ready	50 days	Mon 2/14/22	Fri 4/22/22
33		Strand	120 days	Thu 4/14/22	Wed 9/28/22
34		Lash Fiber	145 days	Tue 9/27/22	Mon 4/17/23
35		Cabinet Set	2 days	Thu 2/2/23	Fri 2/3/23
36		Splicing	58 days	Mon 4/17/23	Wed 7/5/23
37		Redlines	1 day	Sat 7/8/23	Sat 7/8/23
38		OTDR Results	1 day	Mon 7/10/23	Mon 7/10/23
39		Addresses for Project	1 day		
40					
41		**Closeout**			
42		Invoice			
43		Permits			
44		Materials Report			
45		Construction Manager Approvel			

Project: Phase 1 Mount Rogers
Date: Tue 8/11/20

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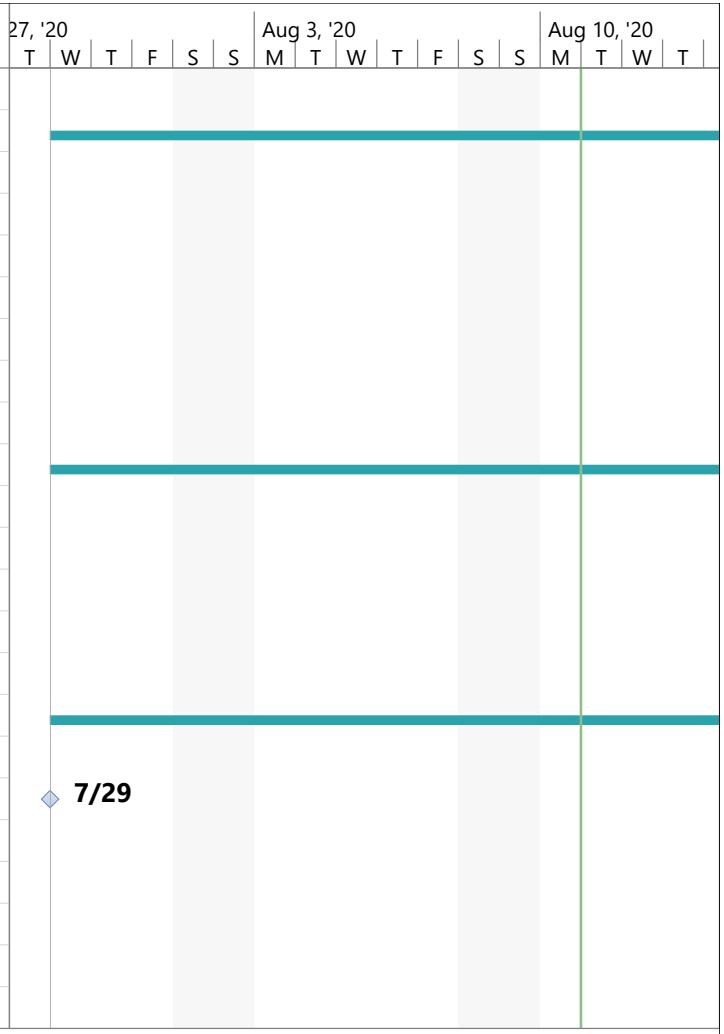
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

Resource Names	% Complete	Comments
Barton John	0%	
	0%	
Barton John,Hughes Kevin	0%	
Barton John	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
Gillenwater Tyler,Trent Tommy	0%	
Gillenwater Tyler	0%	
Tim Nutter	0%	
Tim Nutter	0%	
	0%	
Hughes Kevin	0%	
	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
	0%	



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Resource Names	% Complete	Comments
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Barton John,Tim Nutter	0%	
	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
Barton John,Gillenwater Tyler,Trent Tommy	0%	
Barton John	0%	
Barton John	0%	
Trent Tommy	0%	
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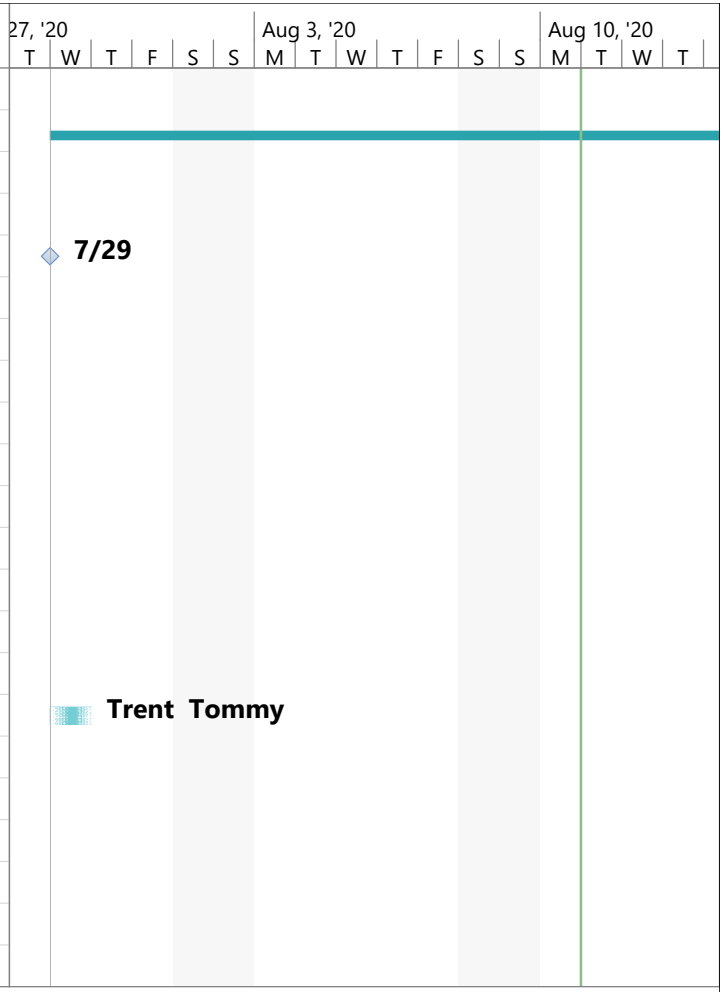

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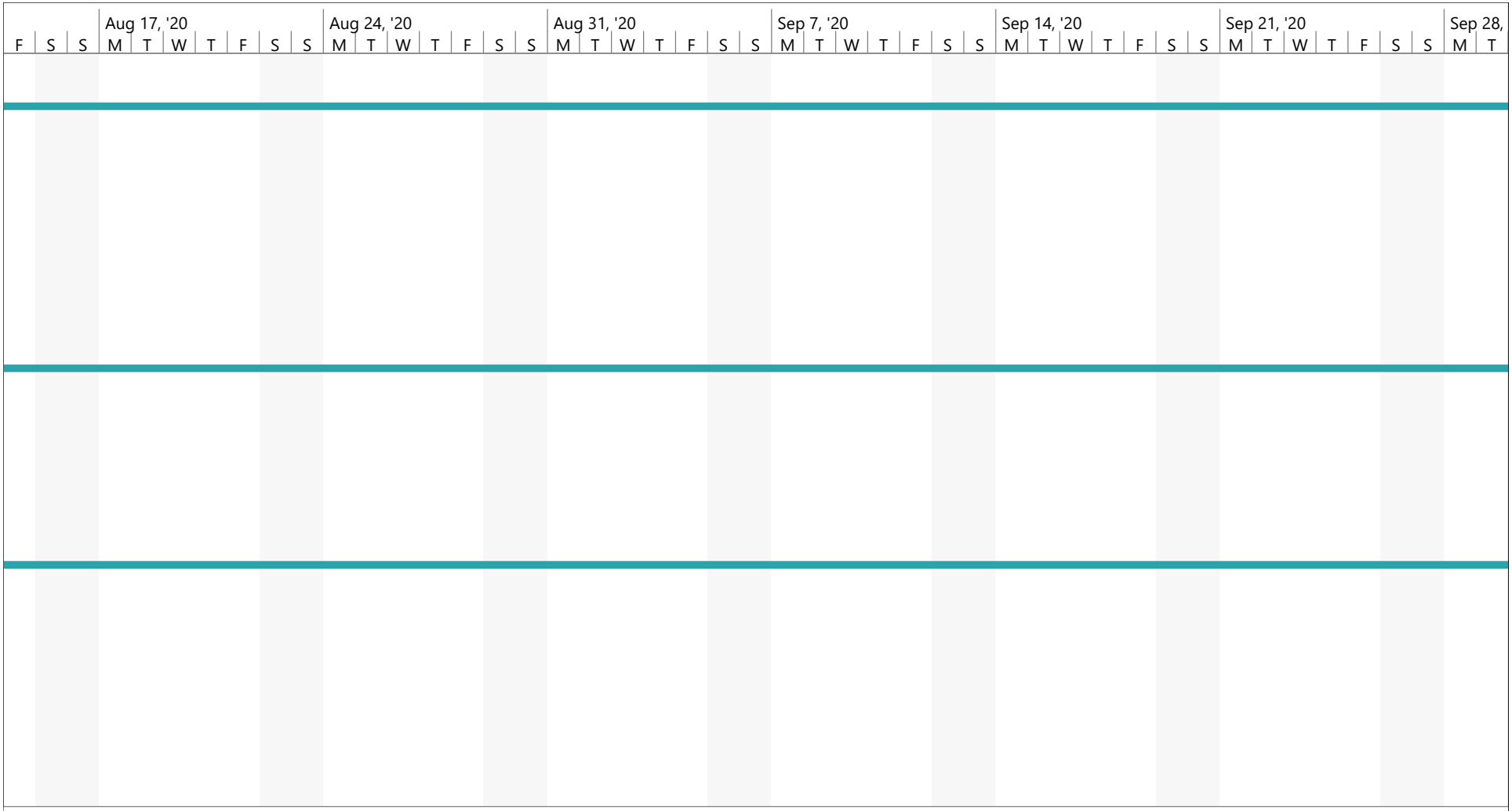

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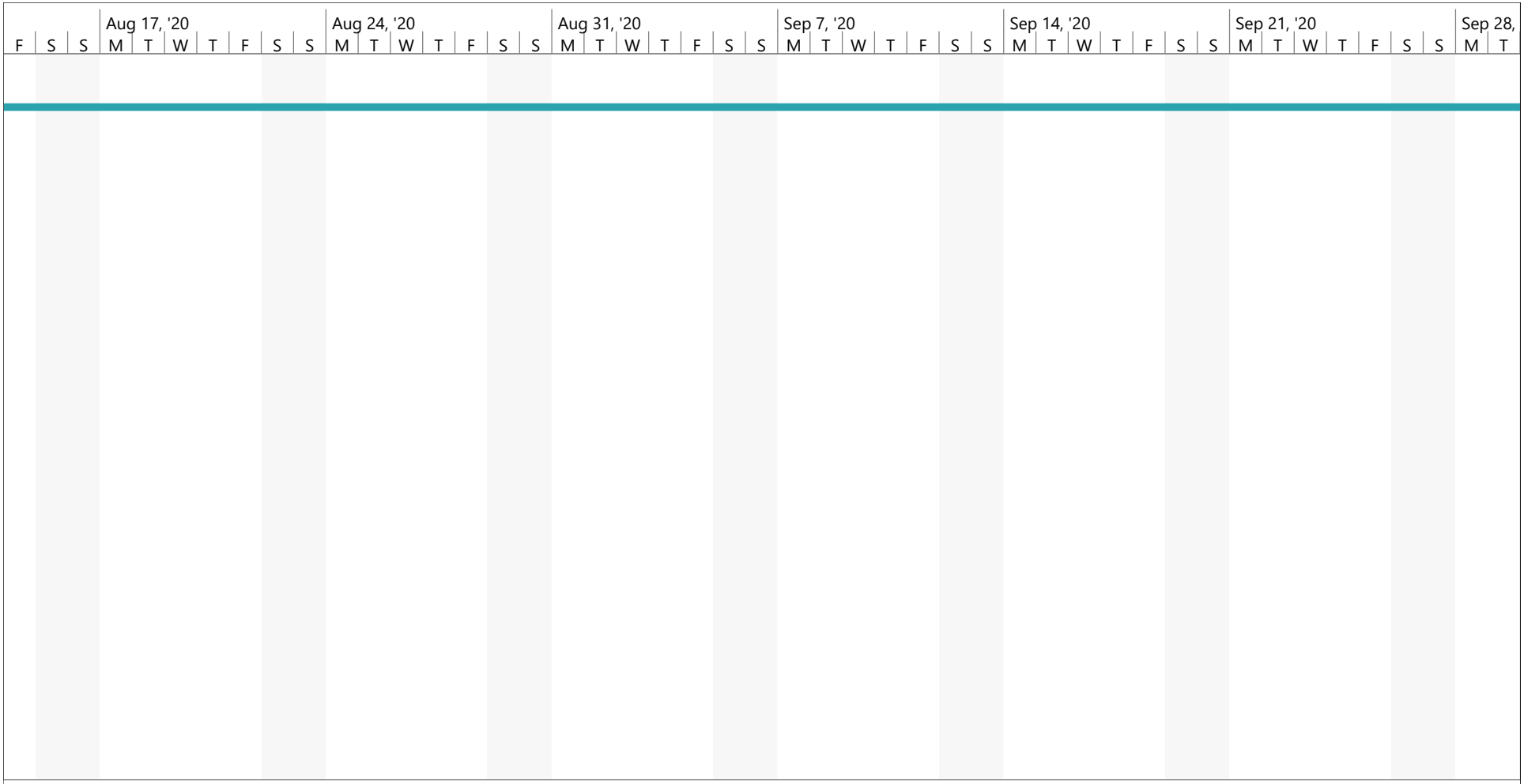

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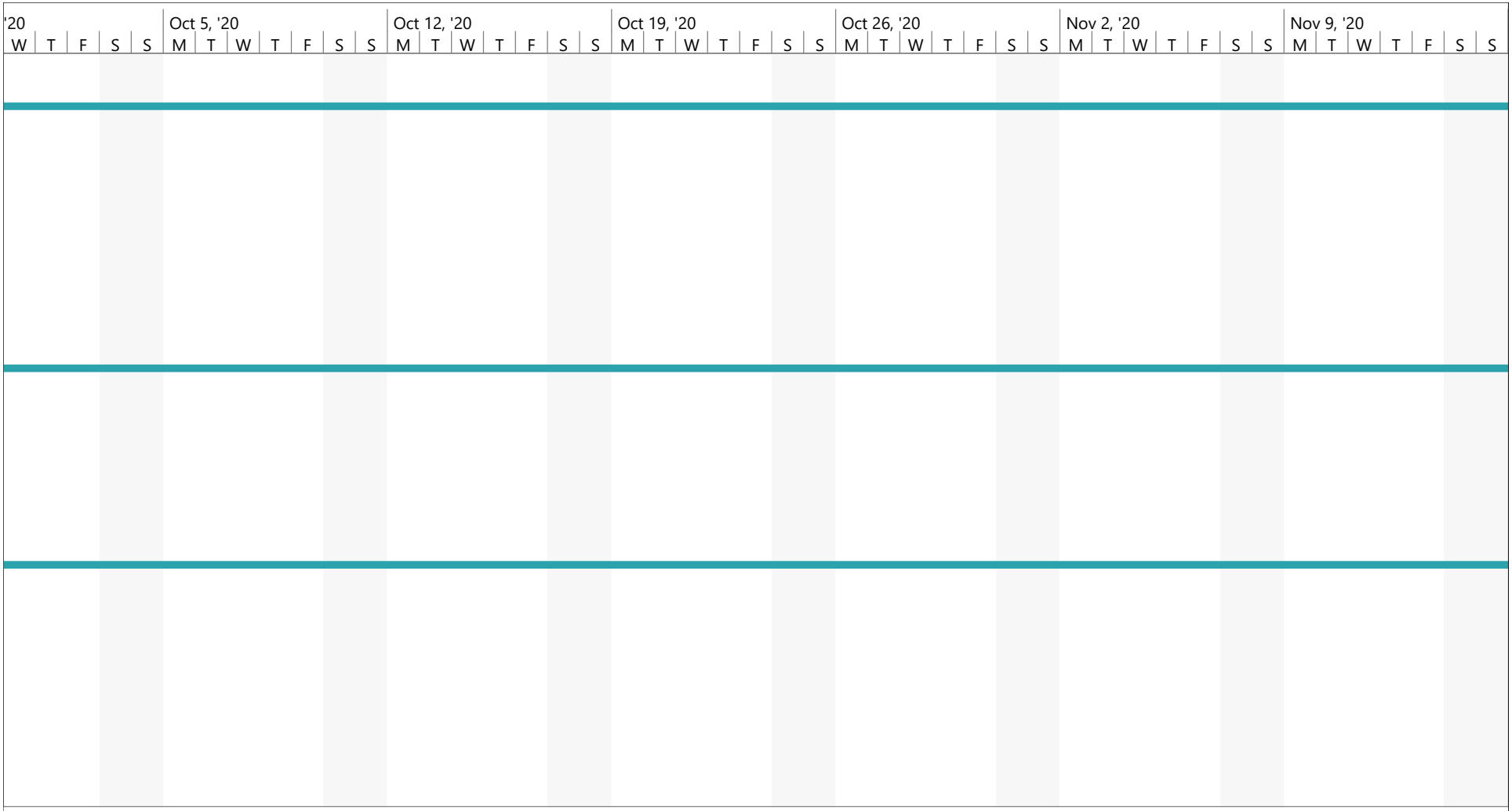

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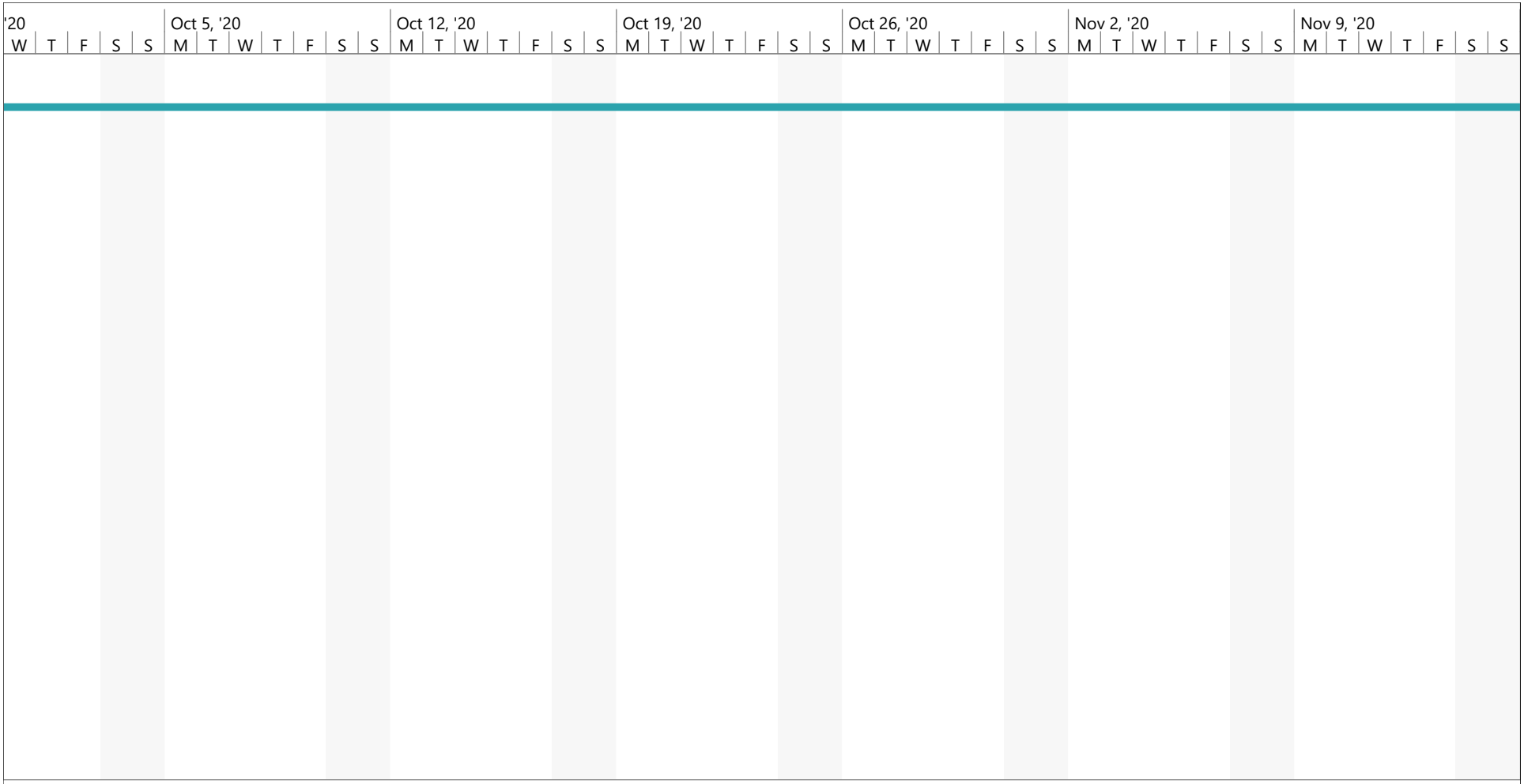

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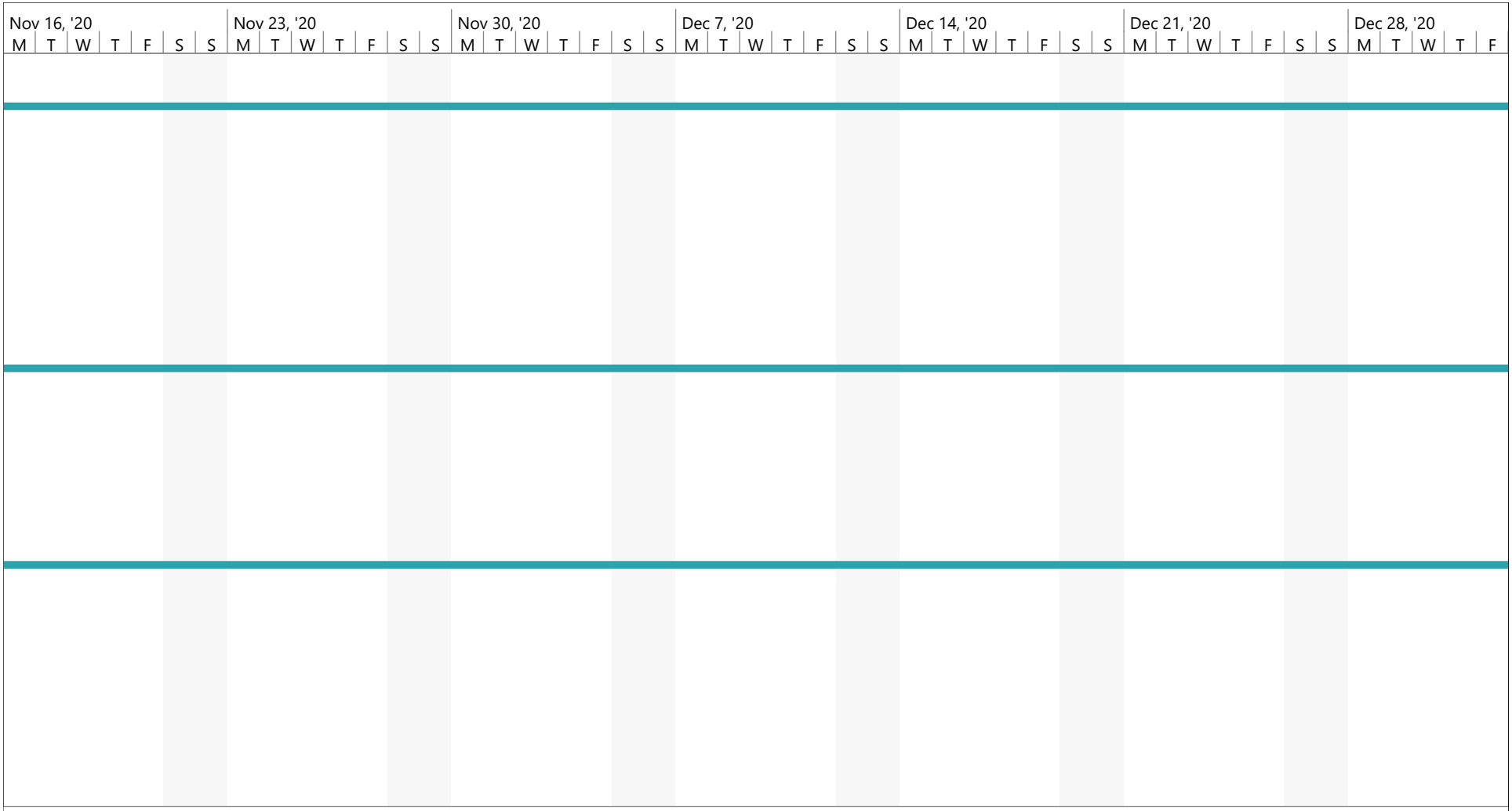

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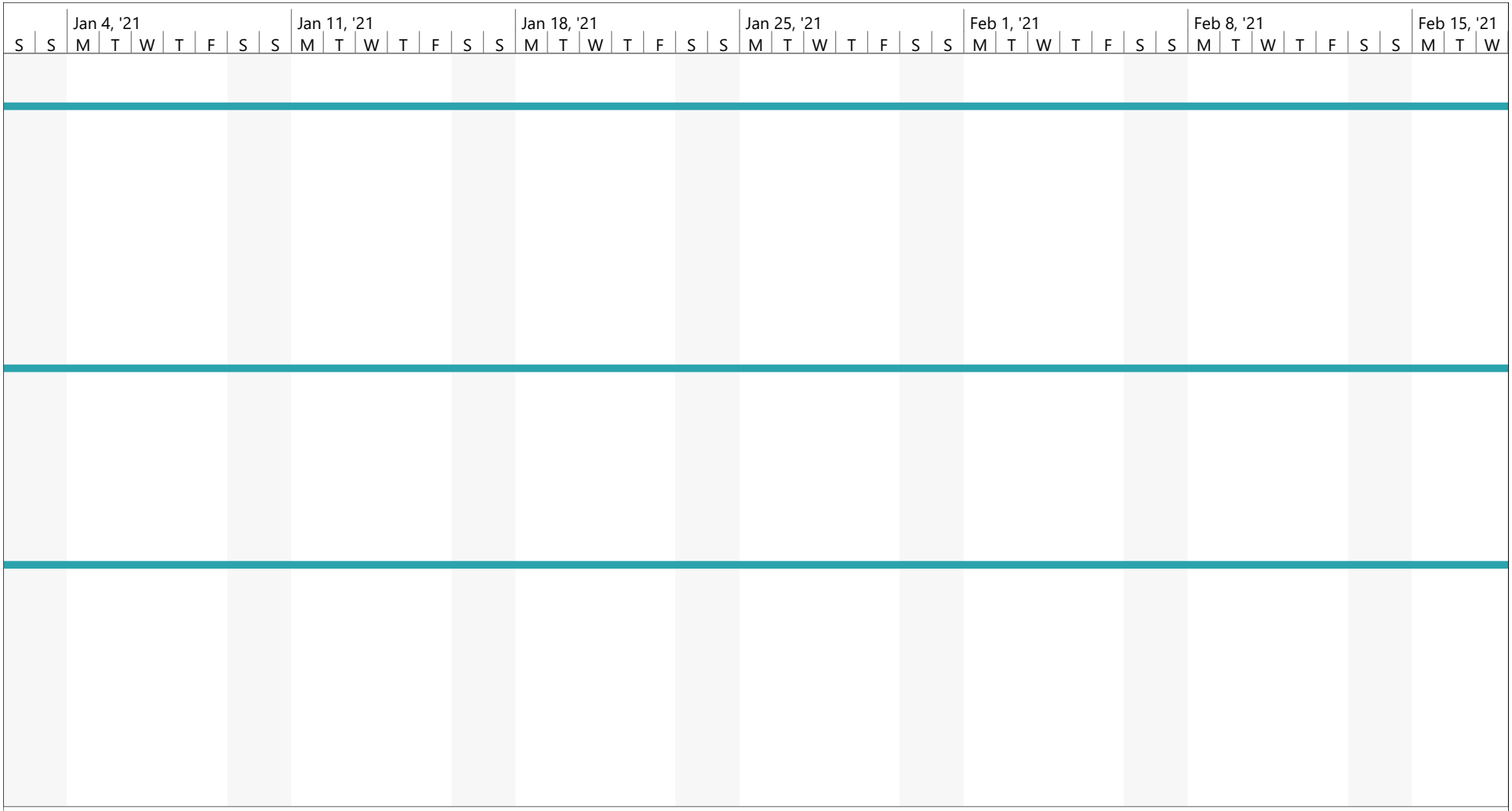

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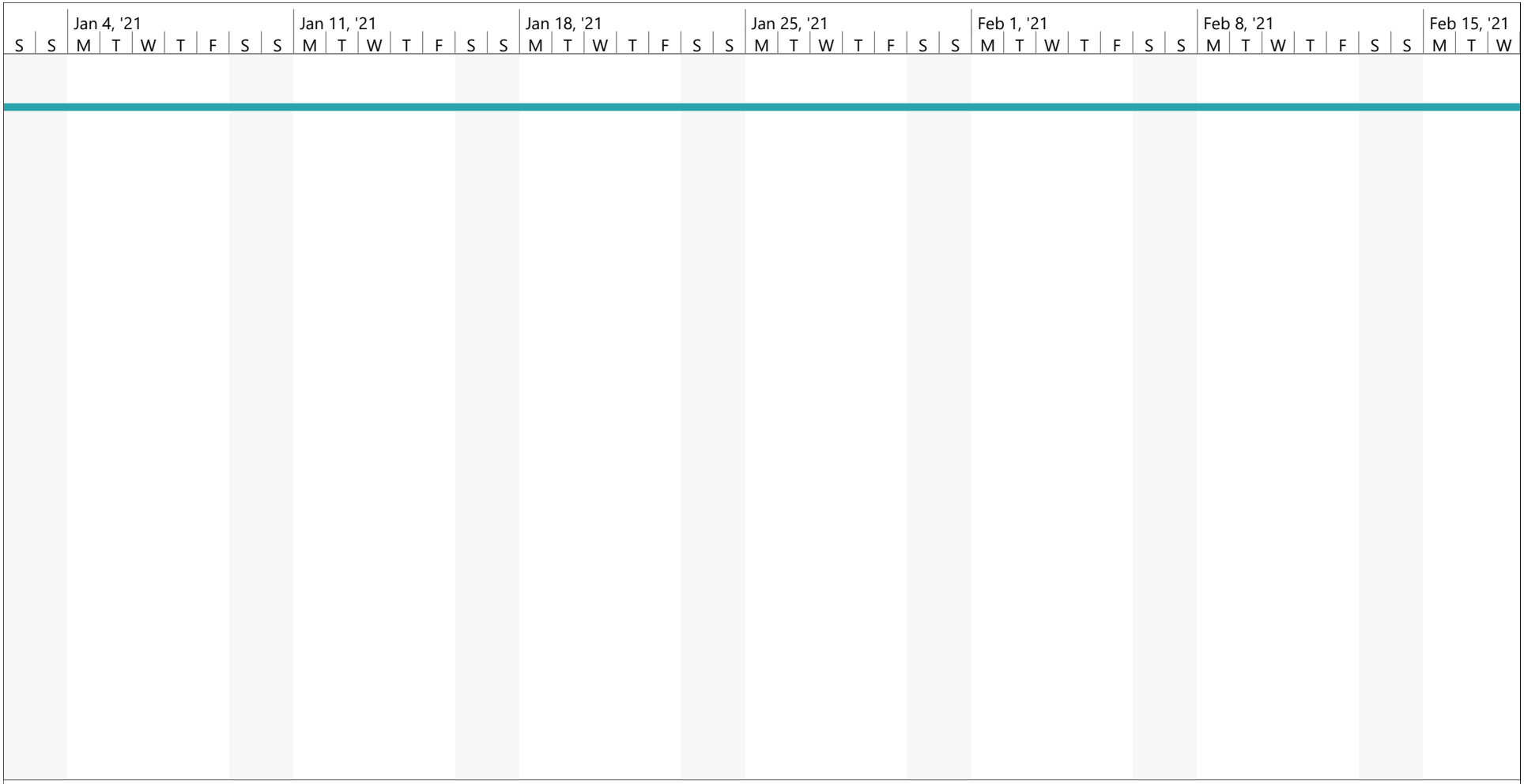

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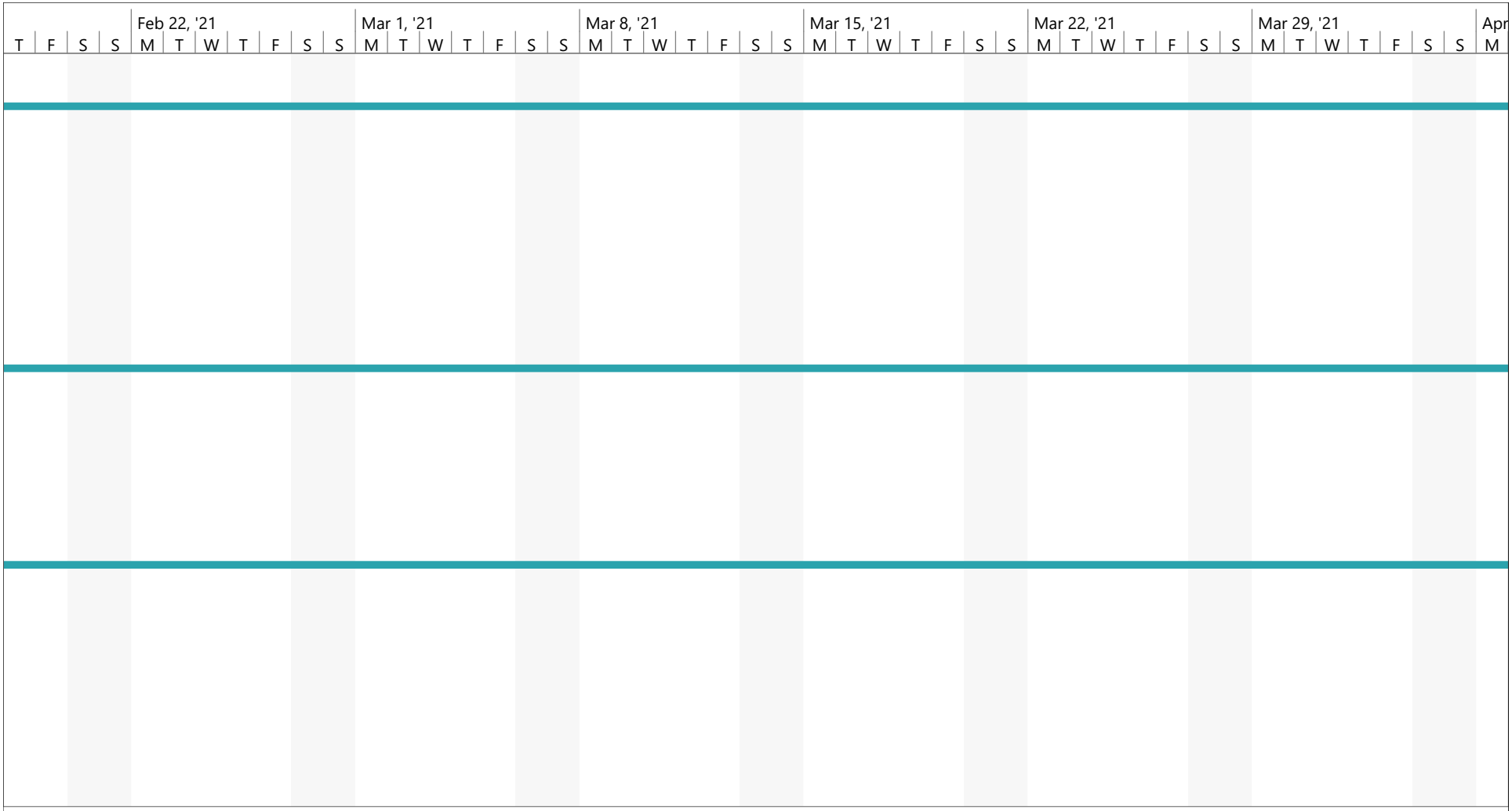

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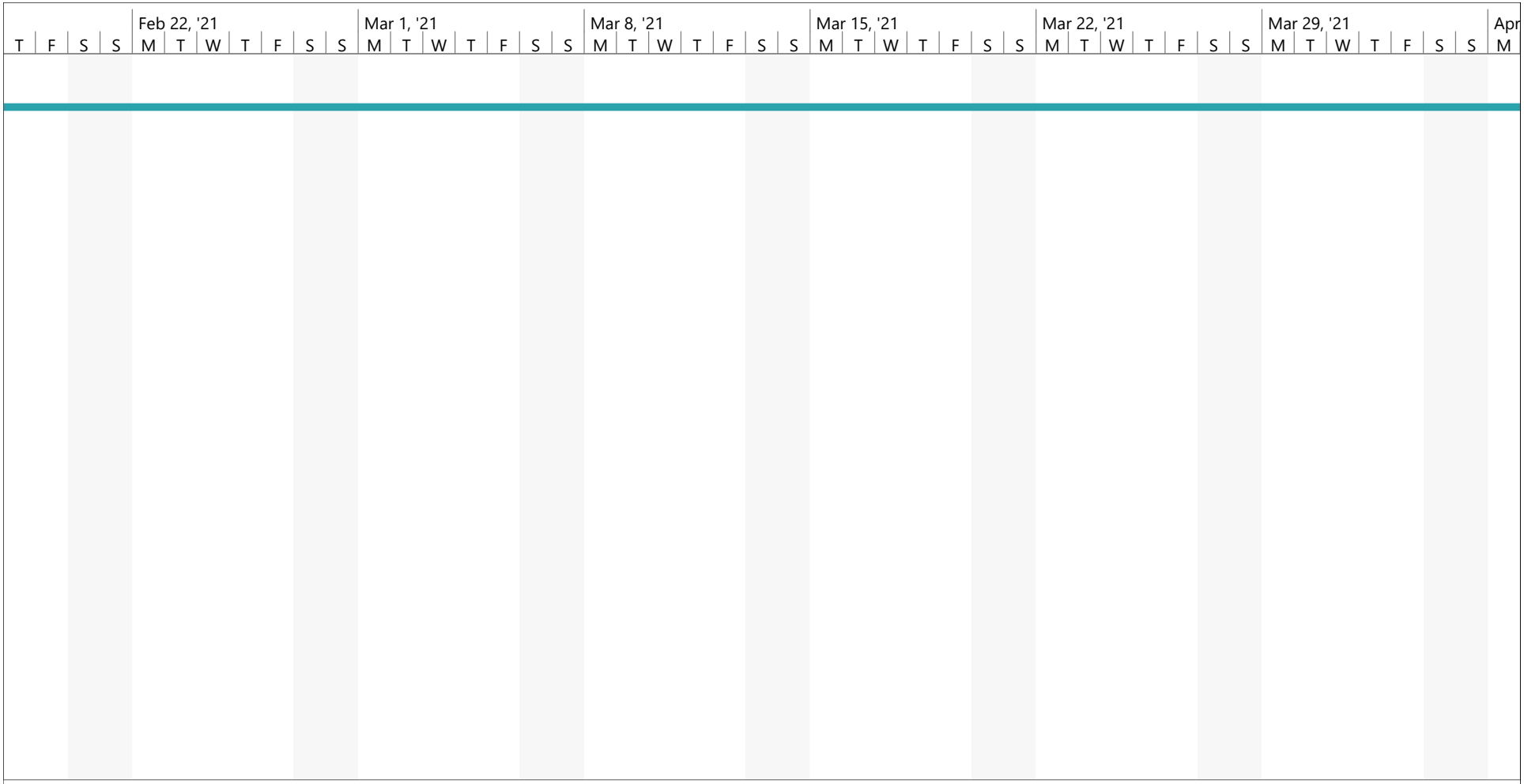

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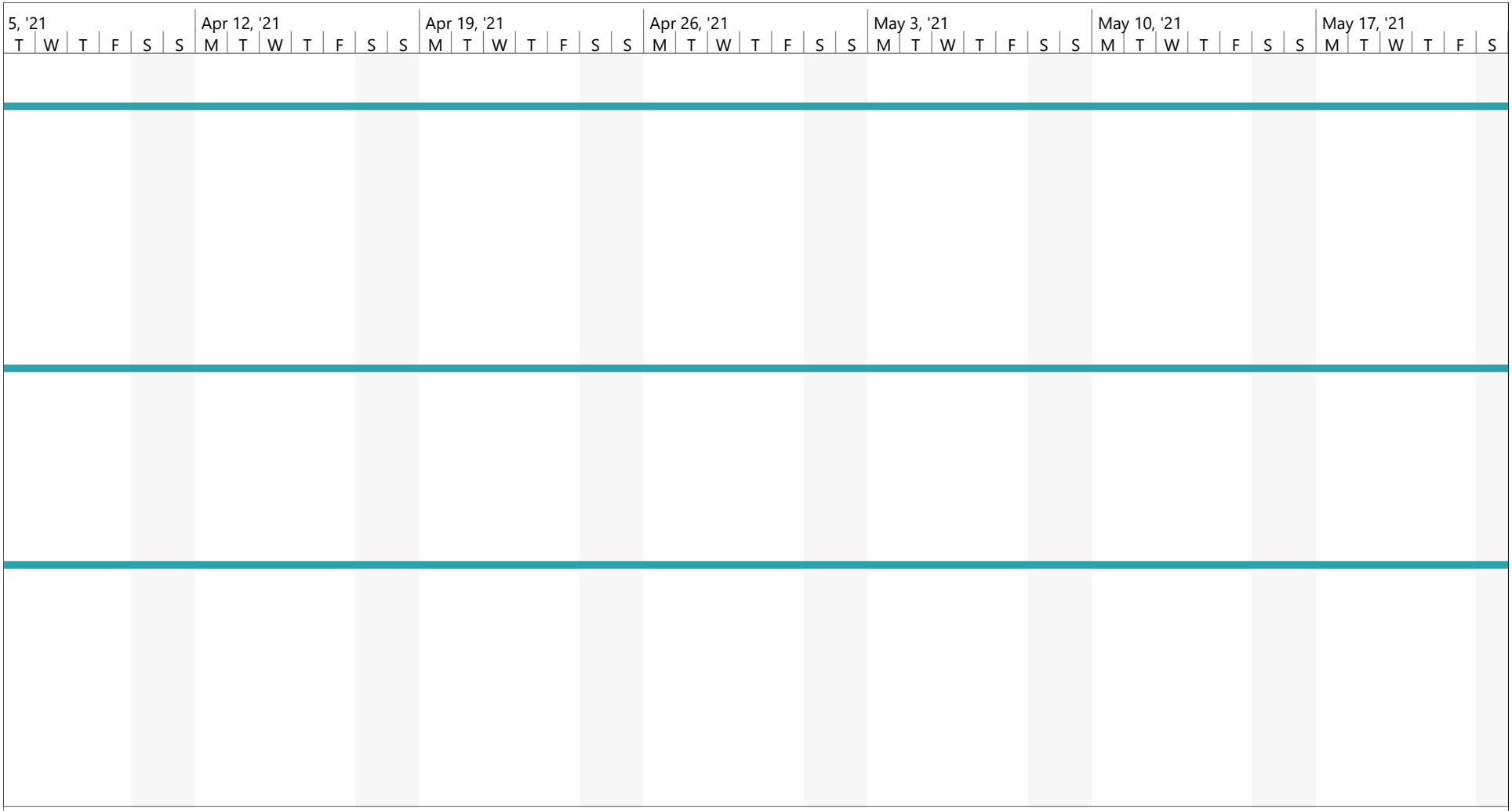

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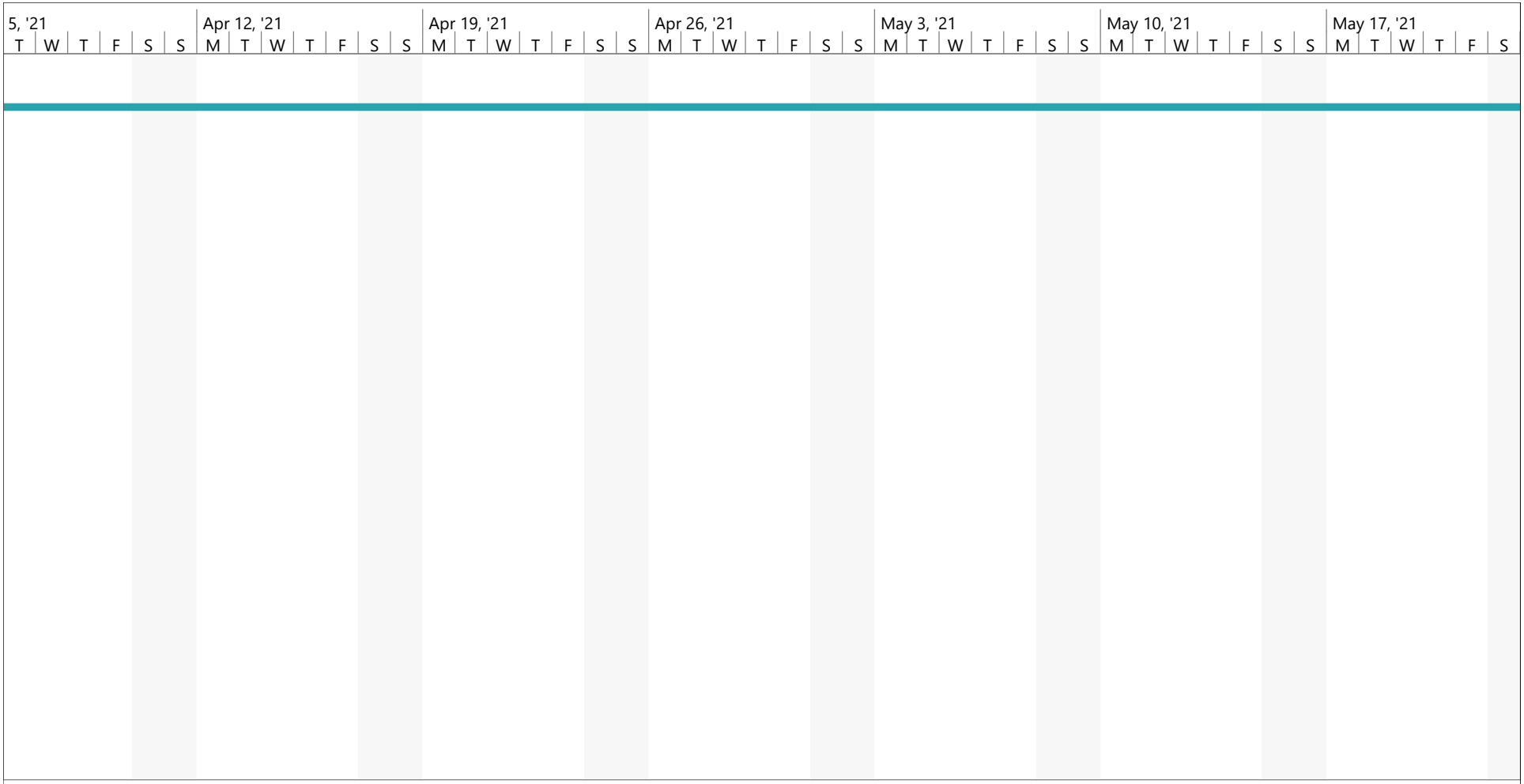

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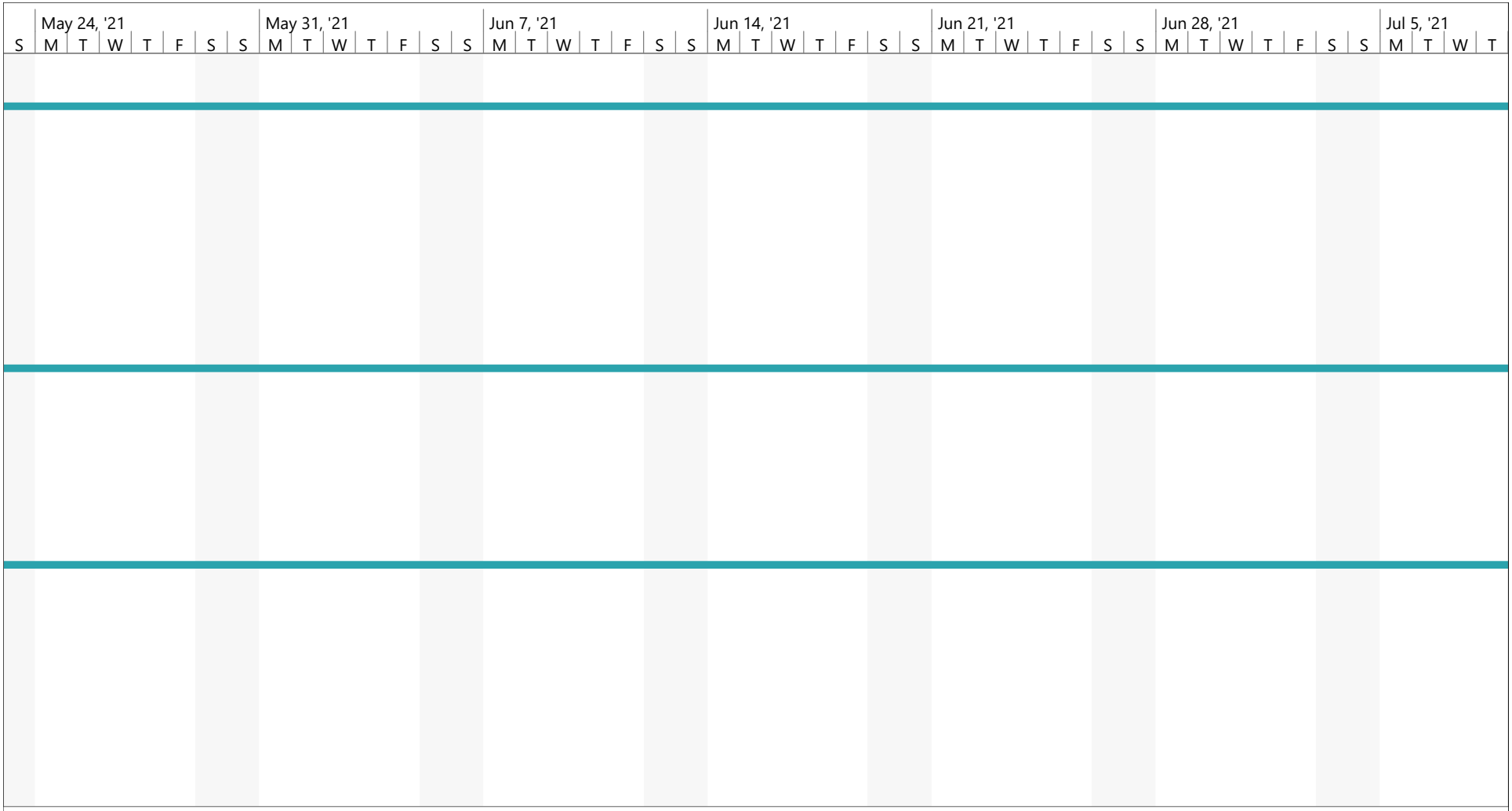

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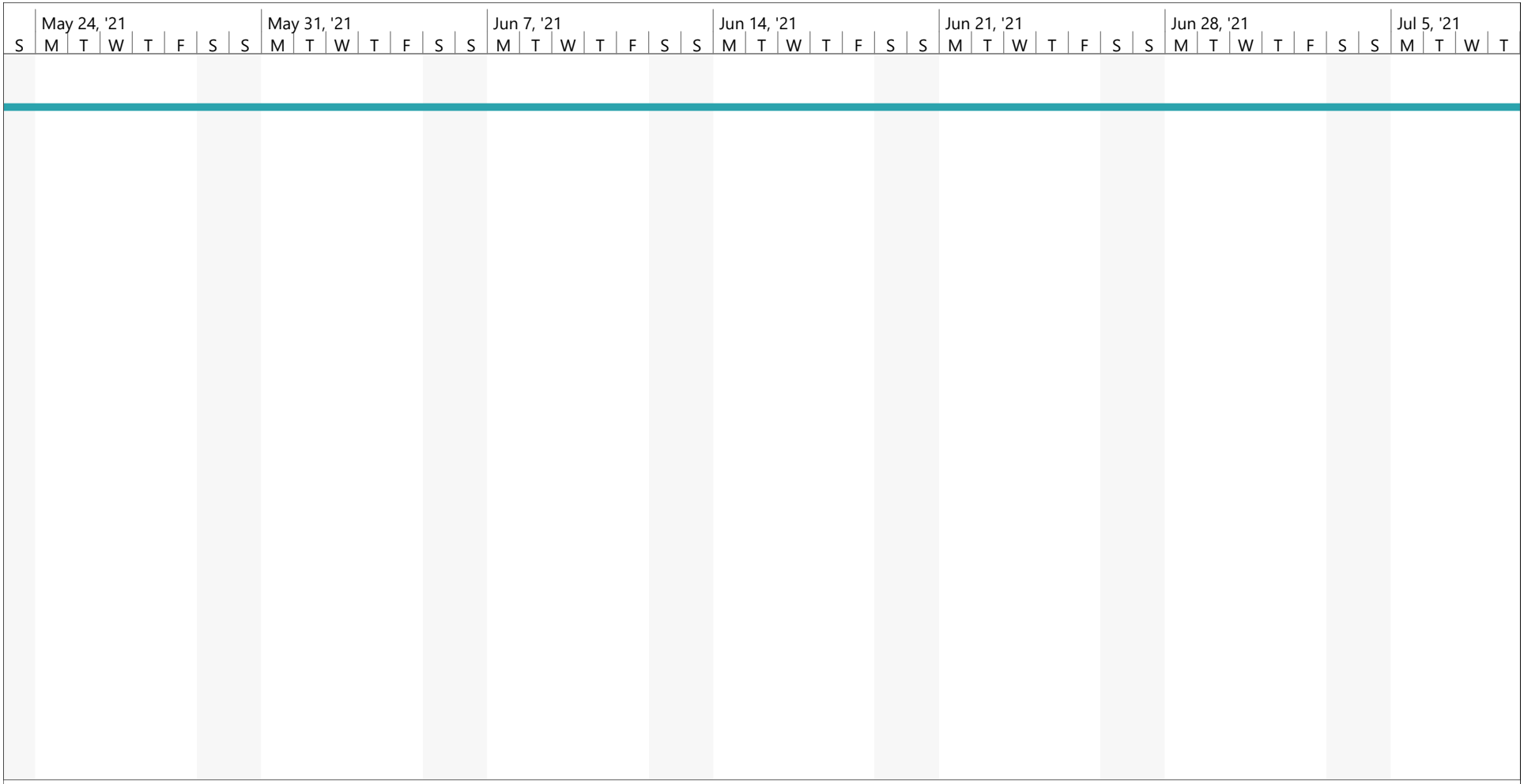

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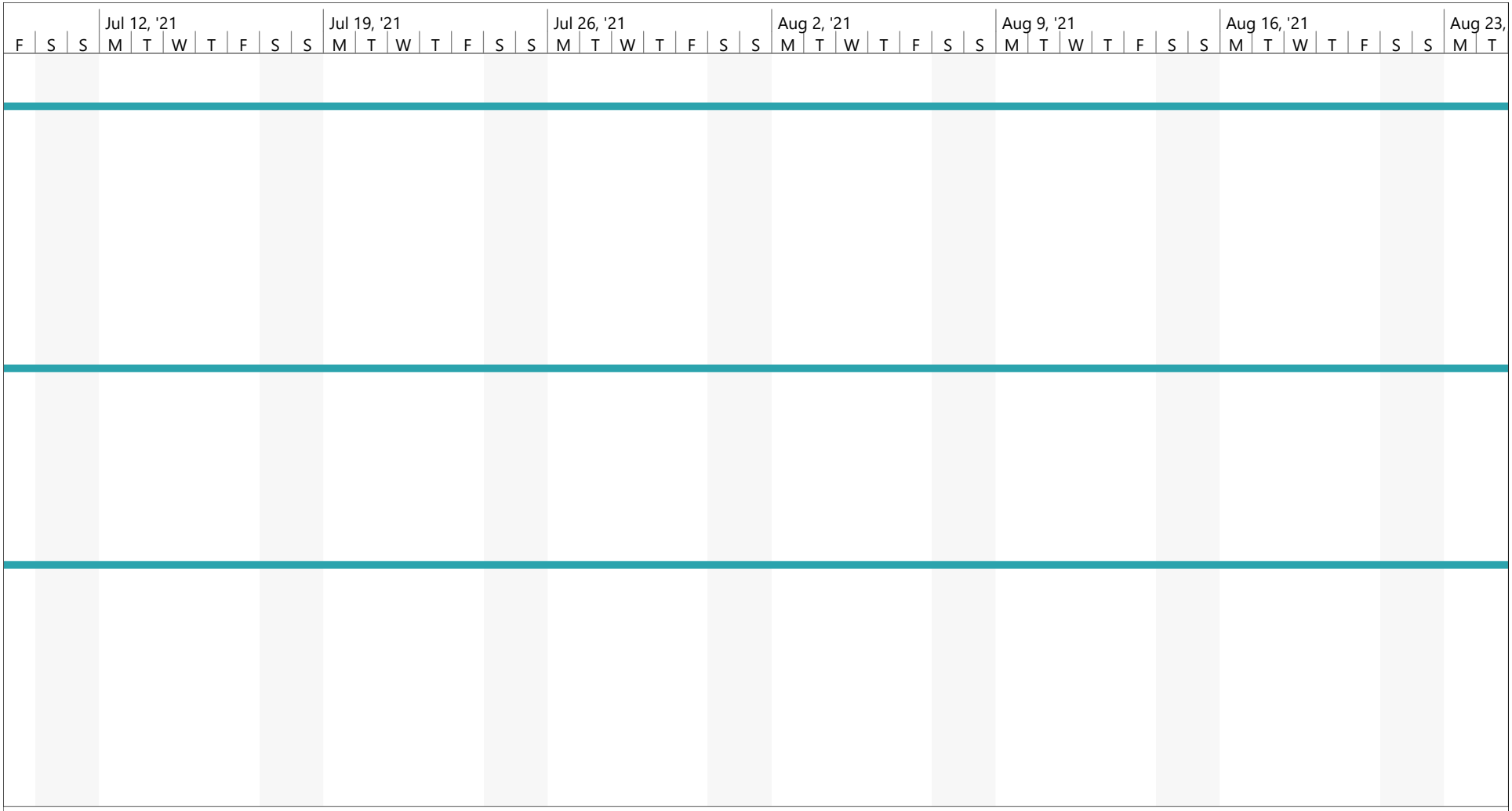

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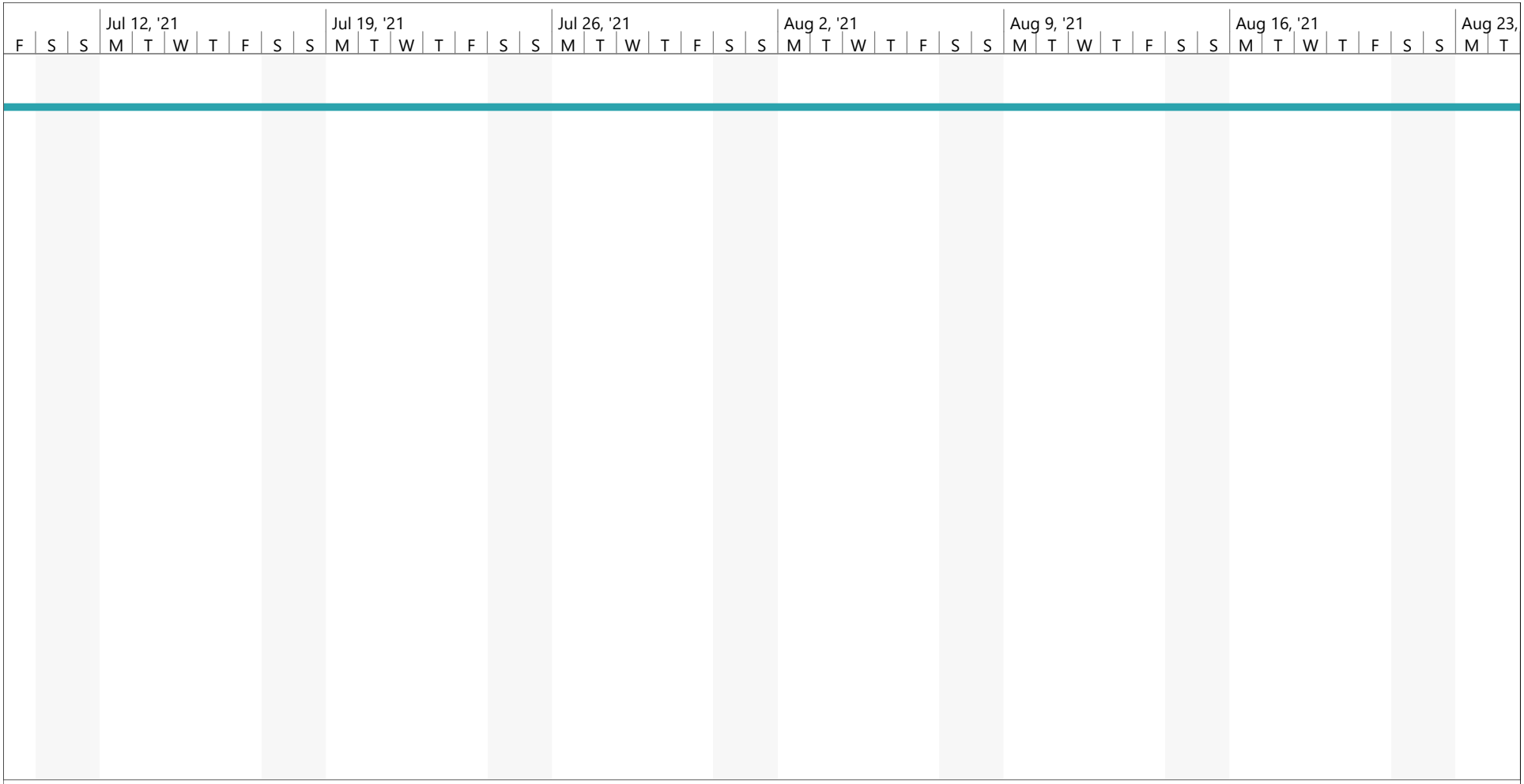

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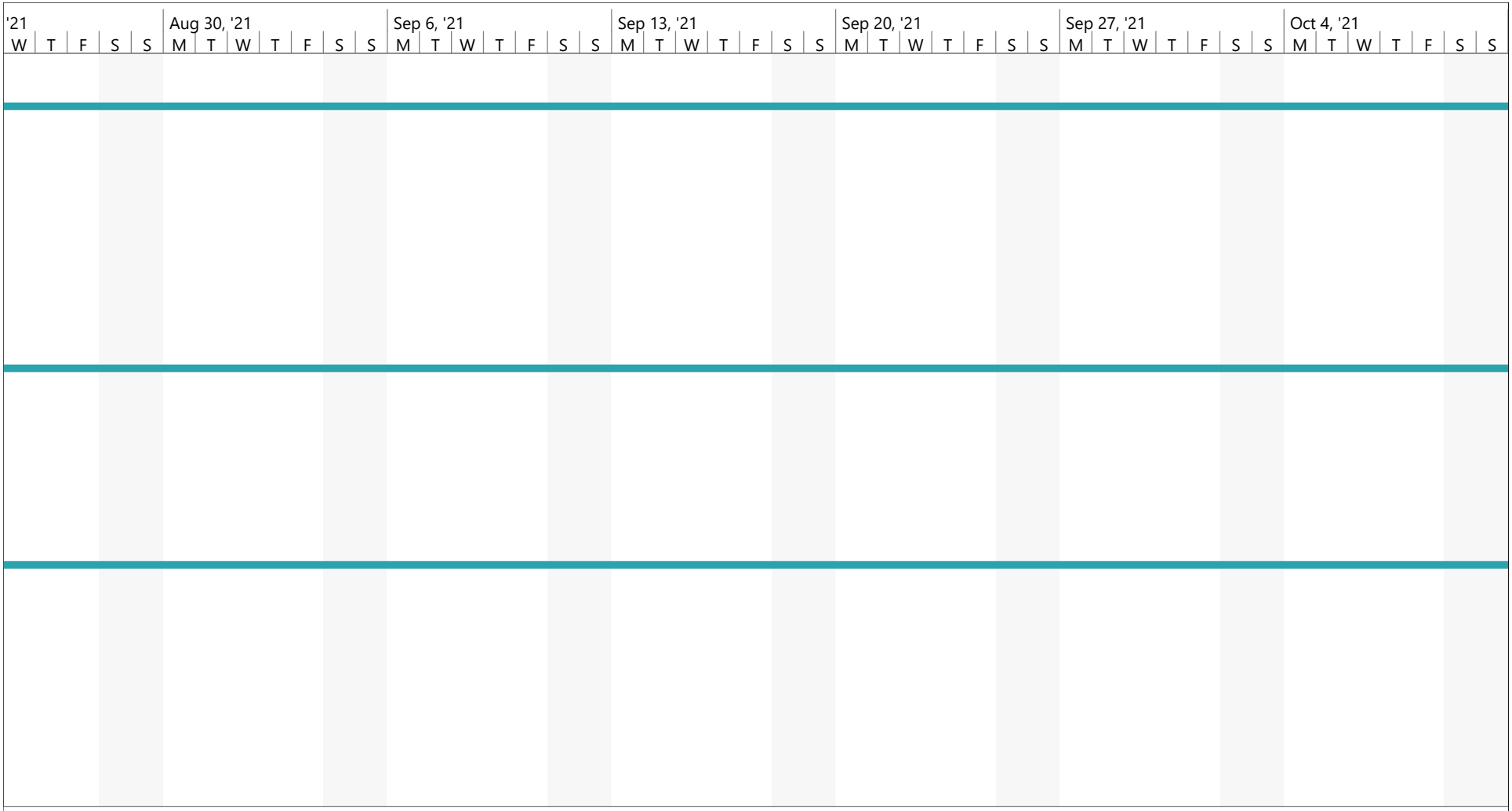

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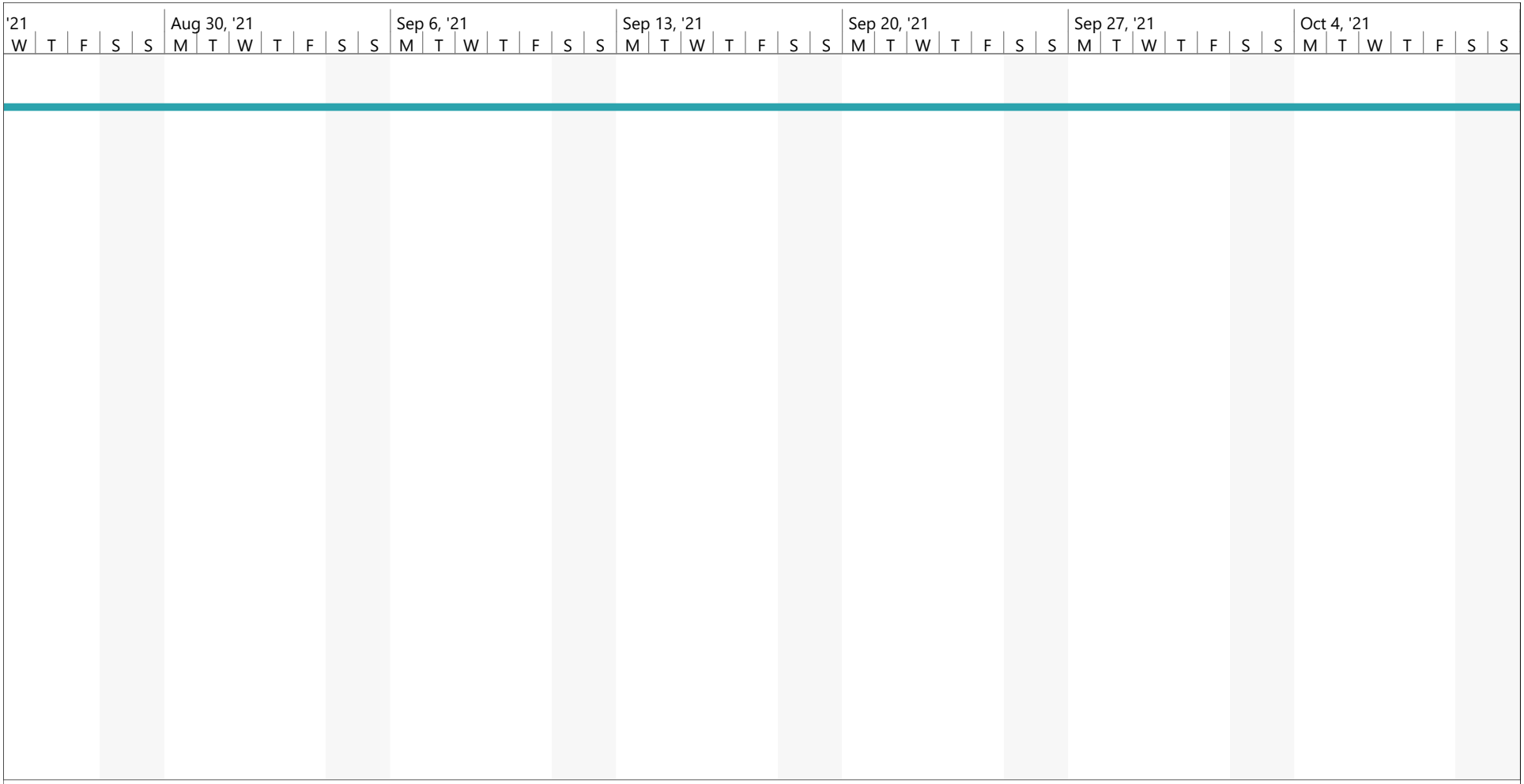

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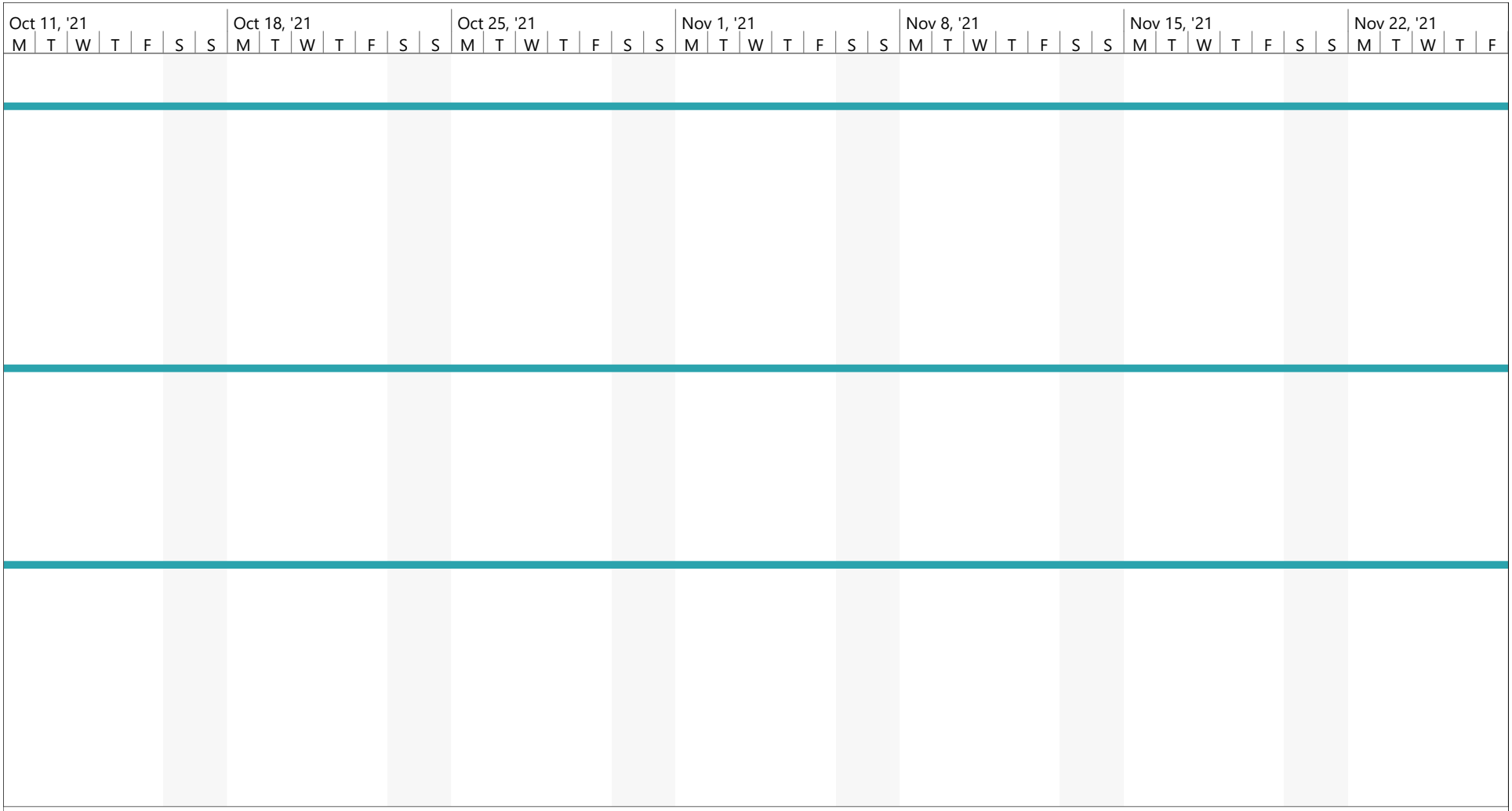

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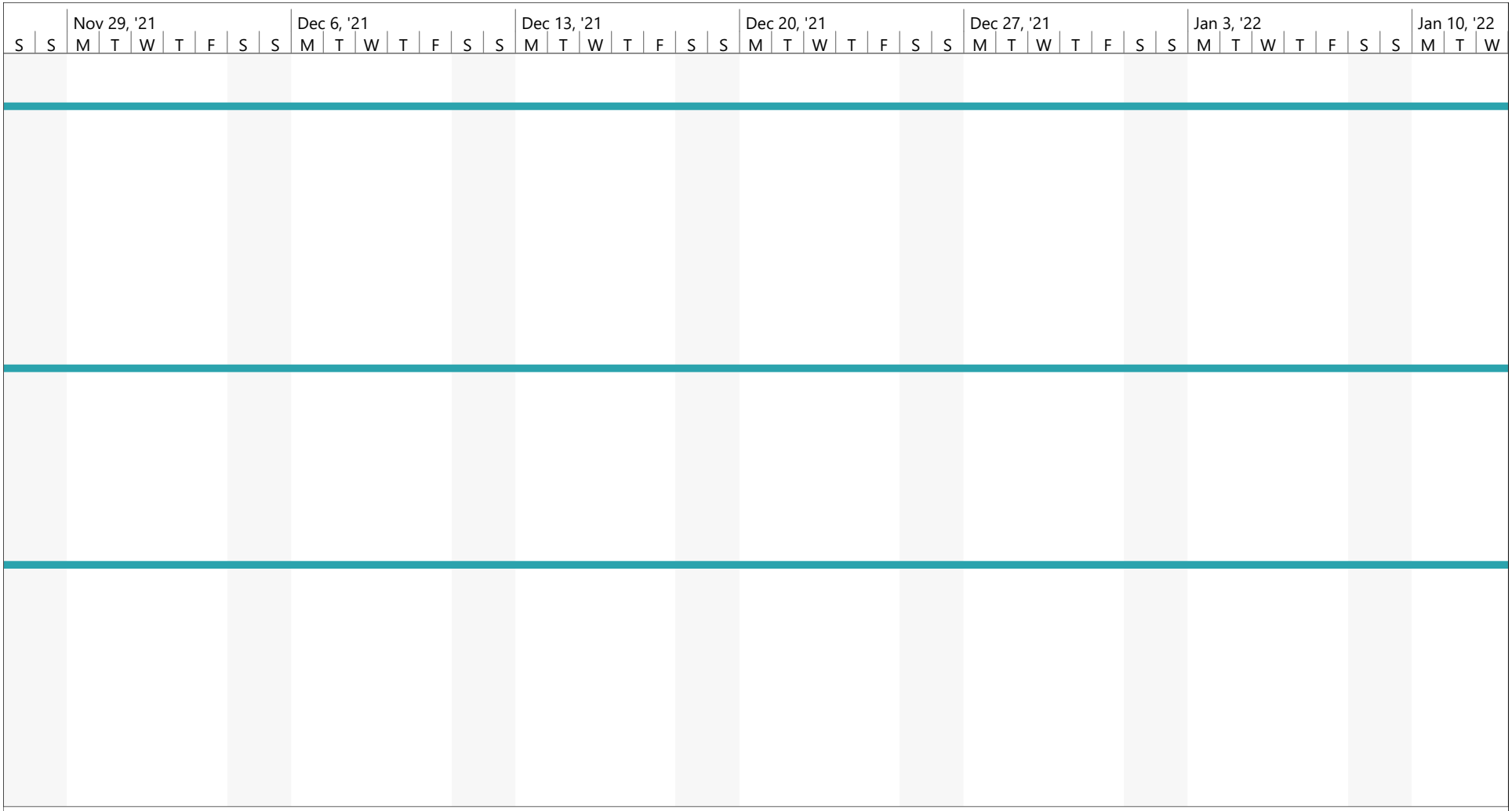

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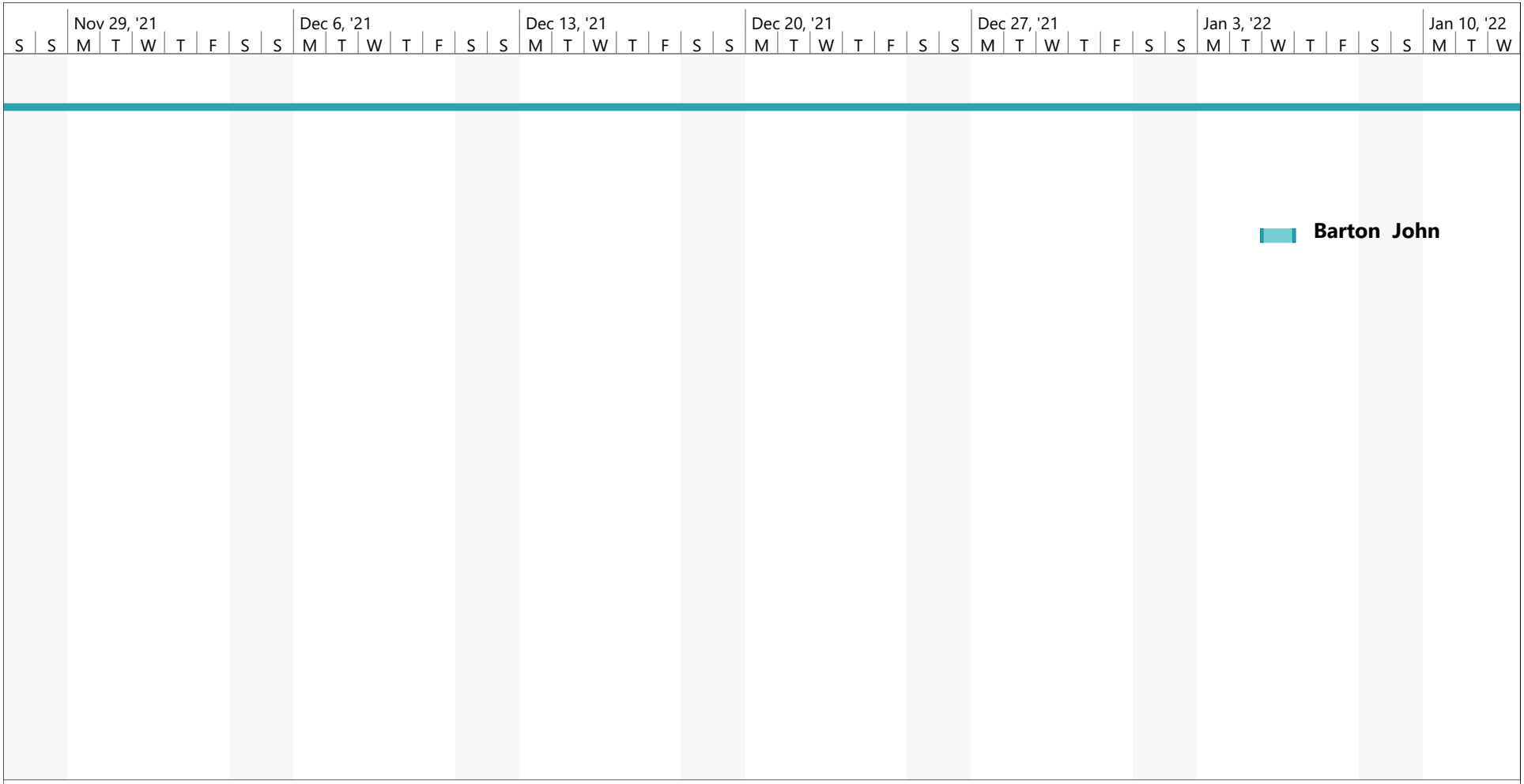

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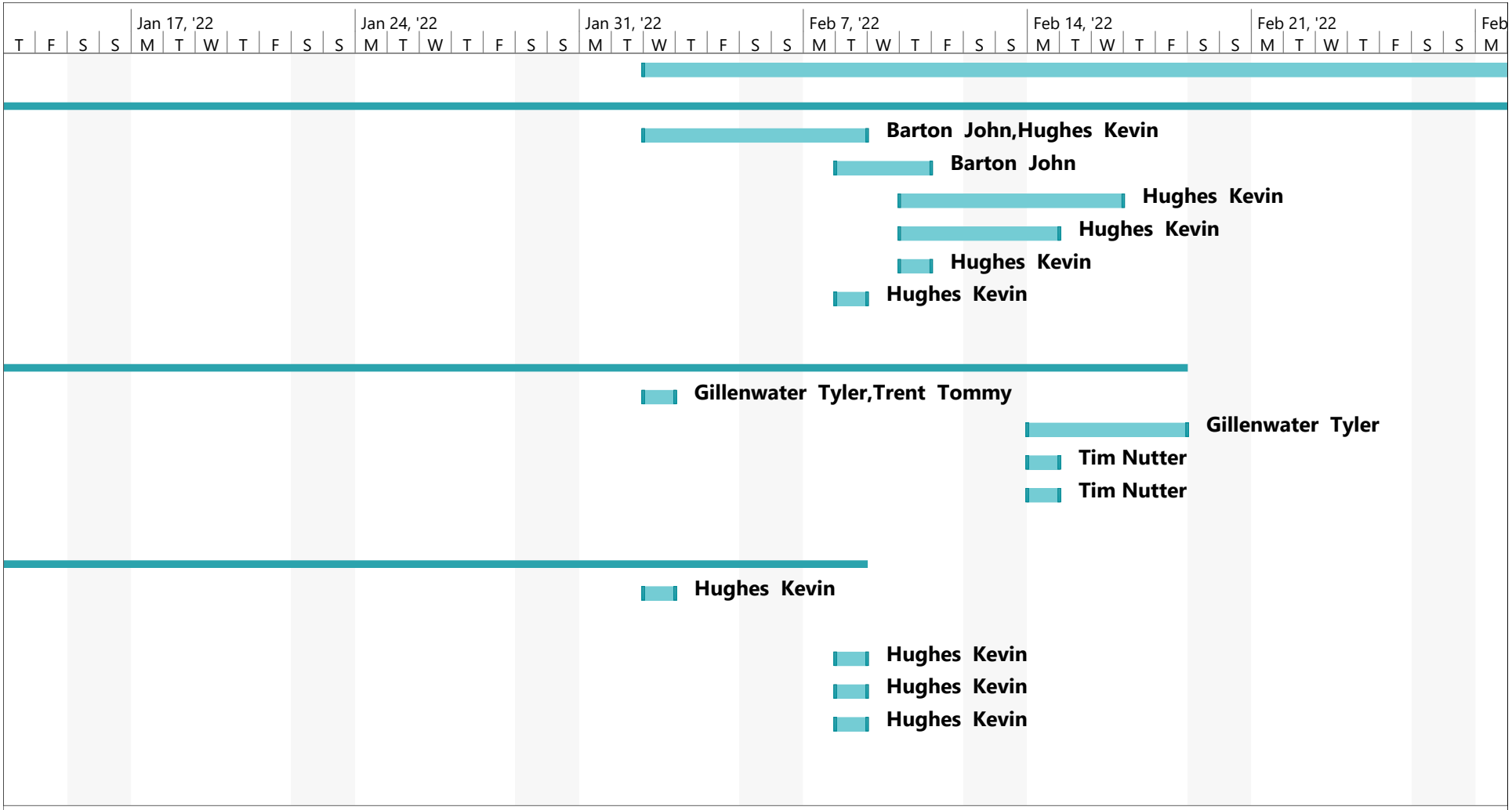

Project: Phase 1 Mount Rogers
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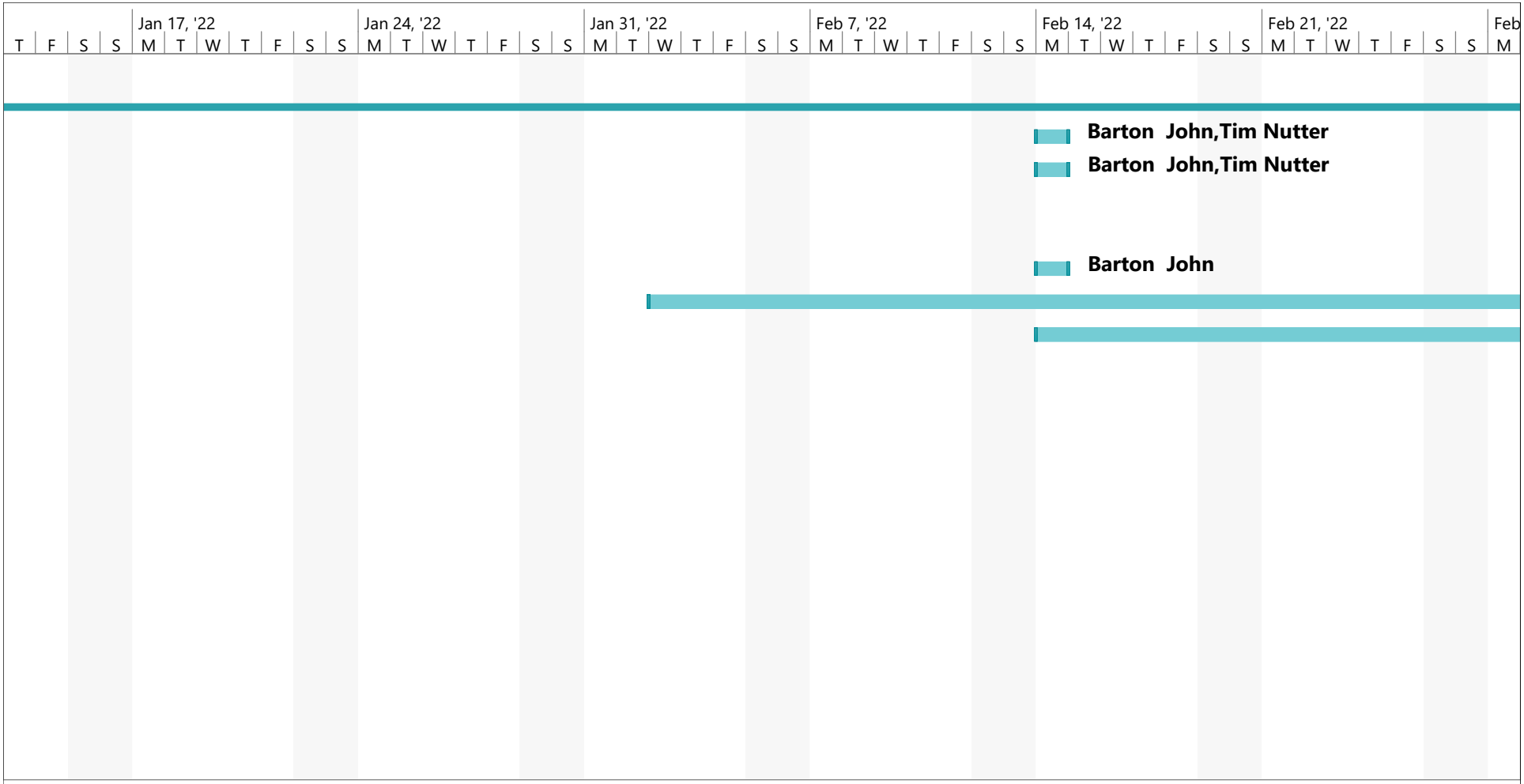
Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	



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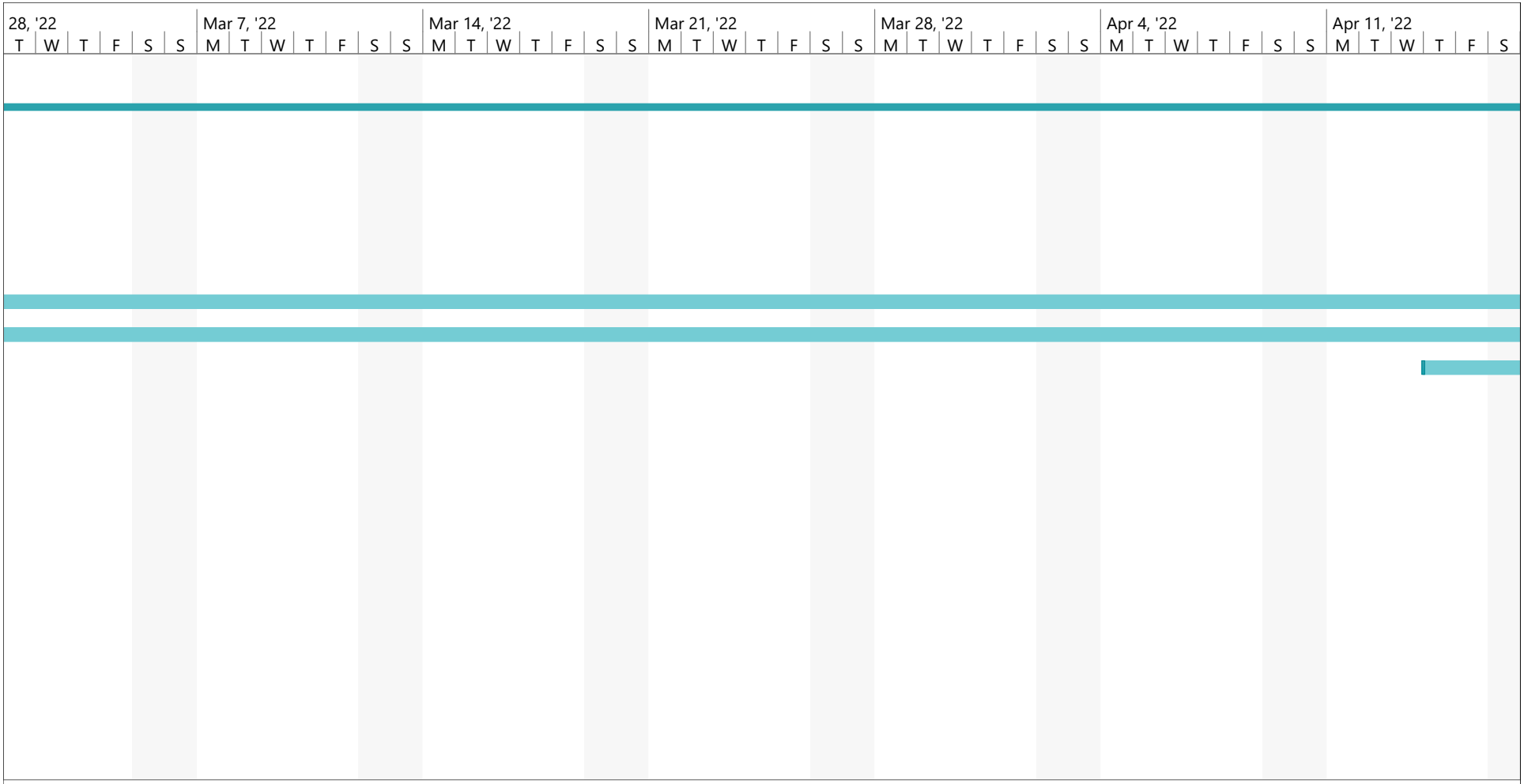

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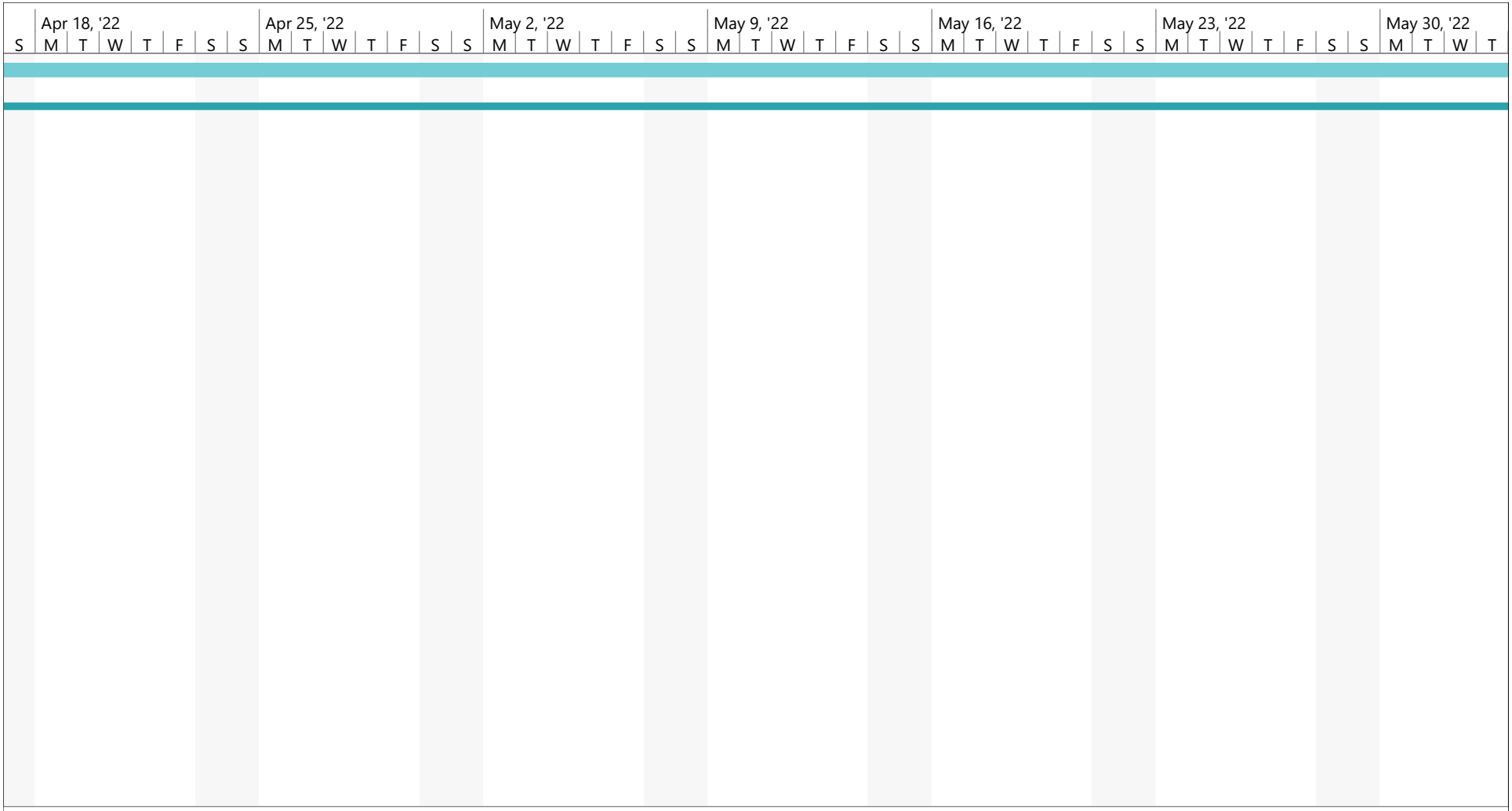

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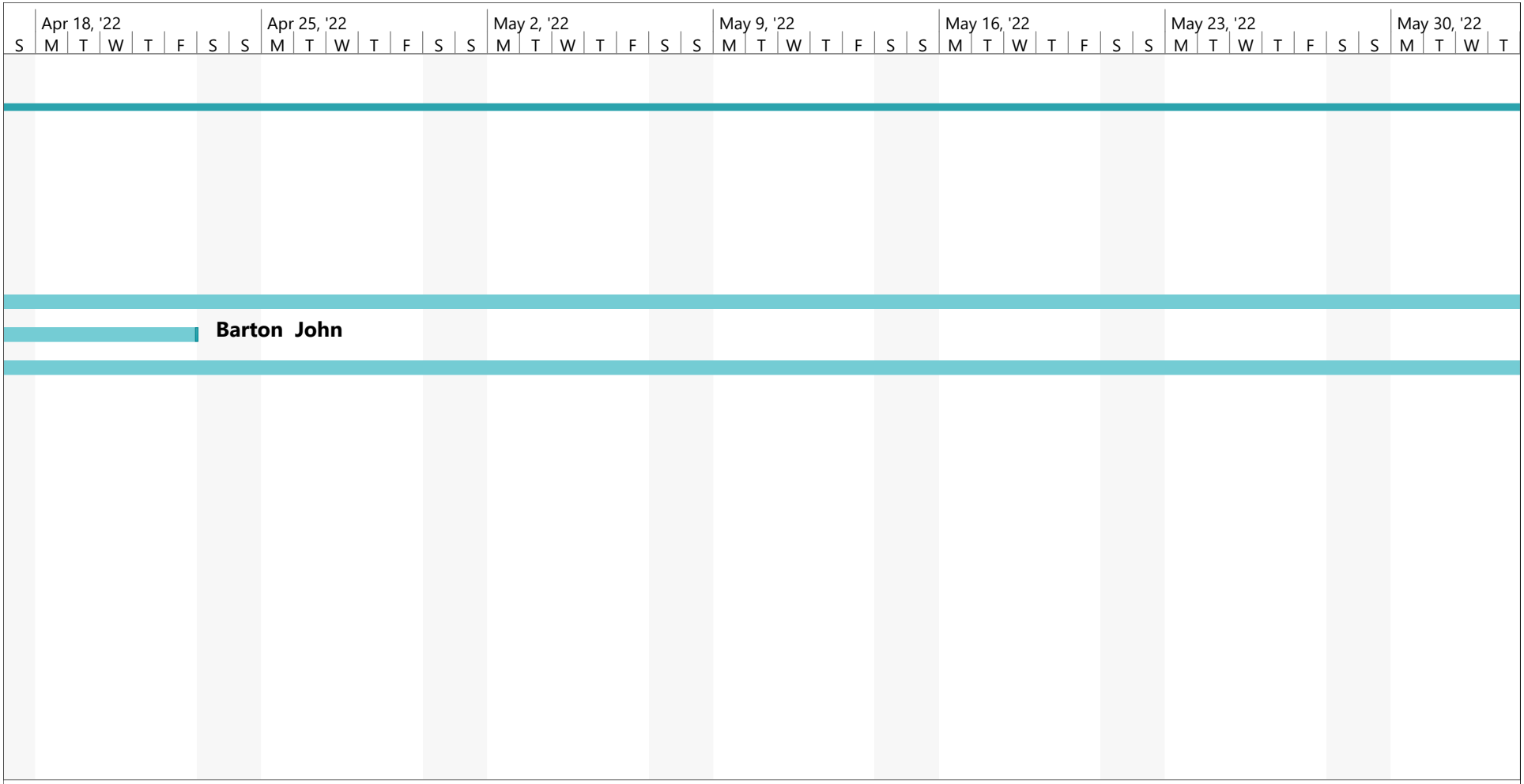

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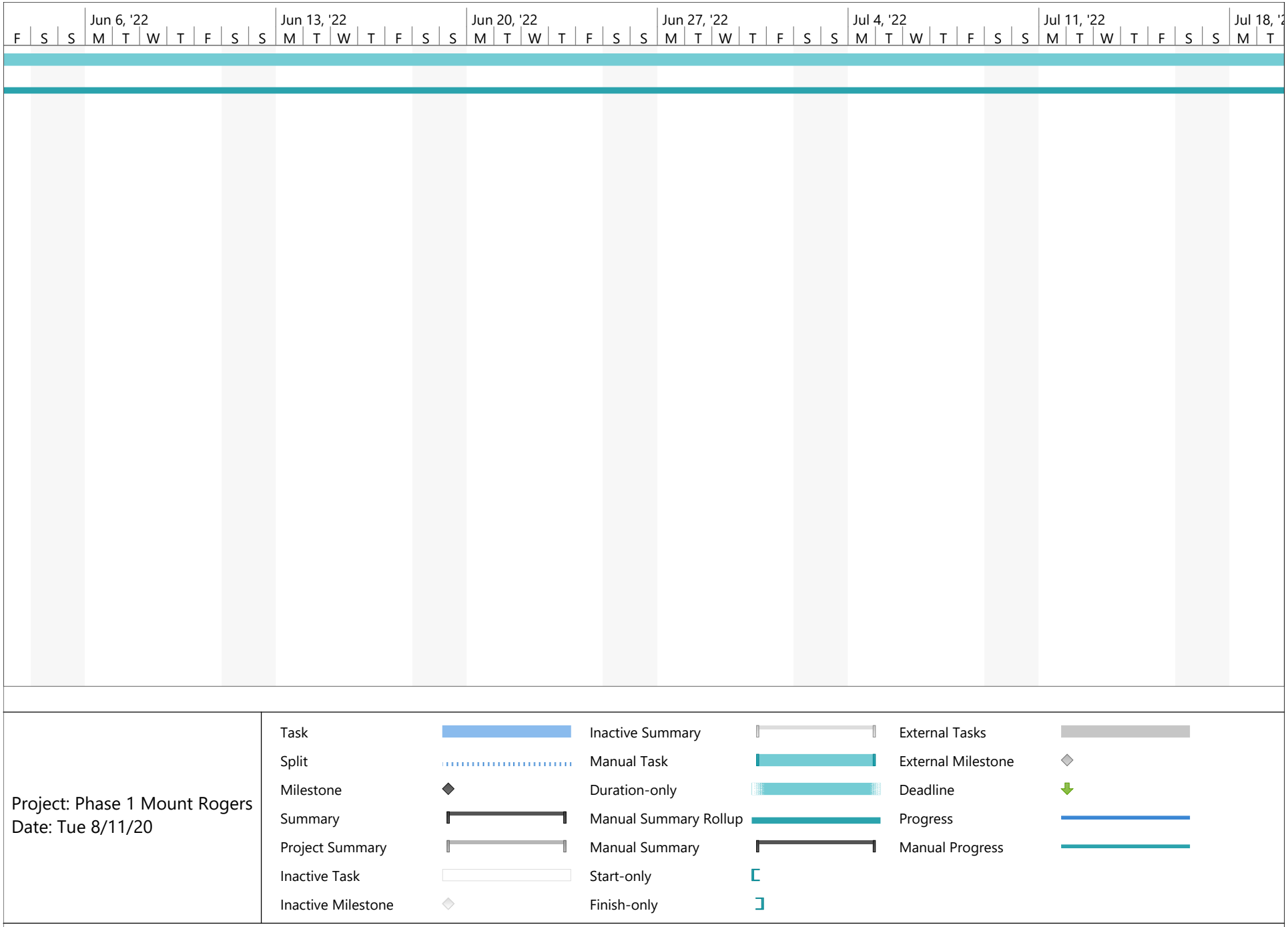

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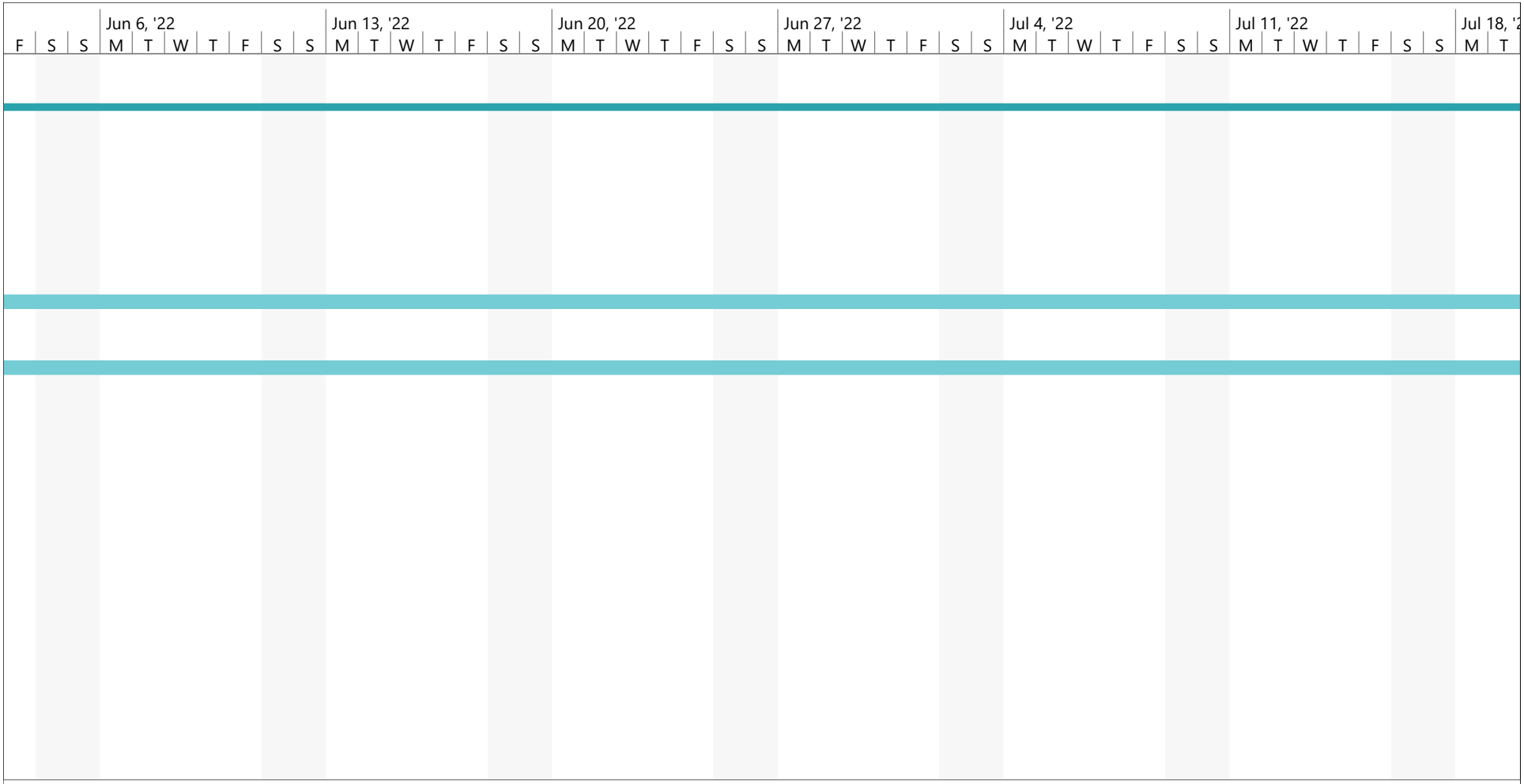

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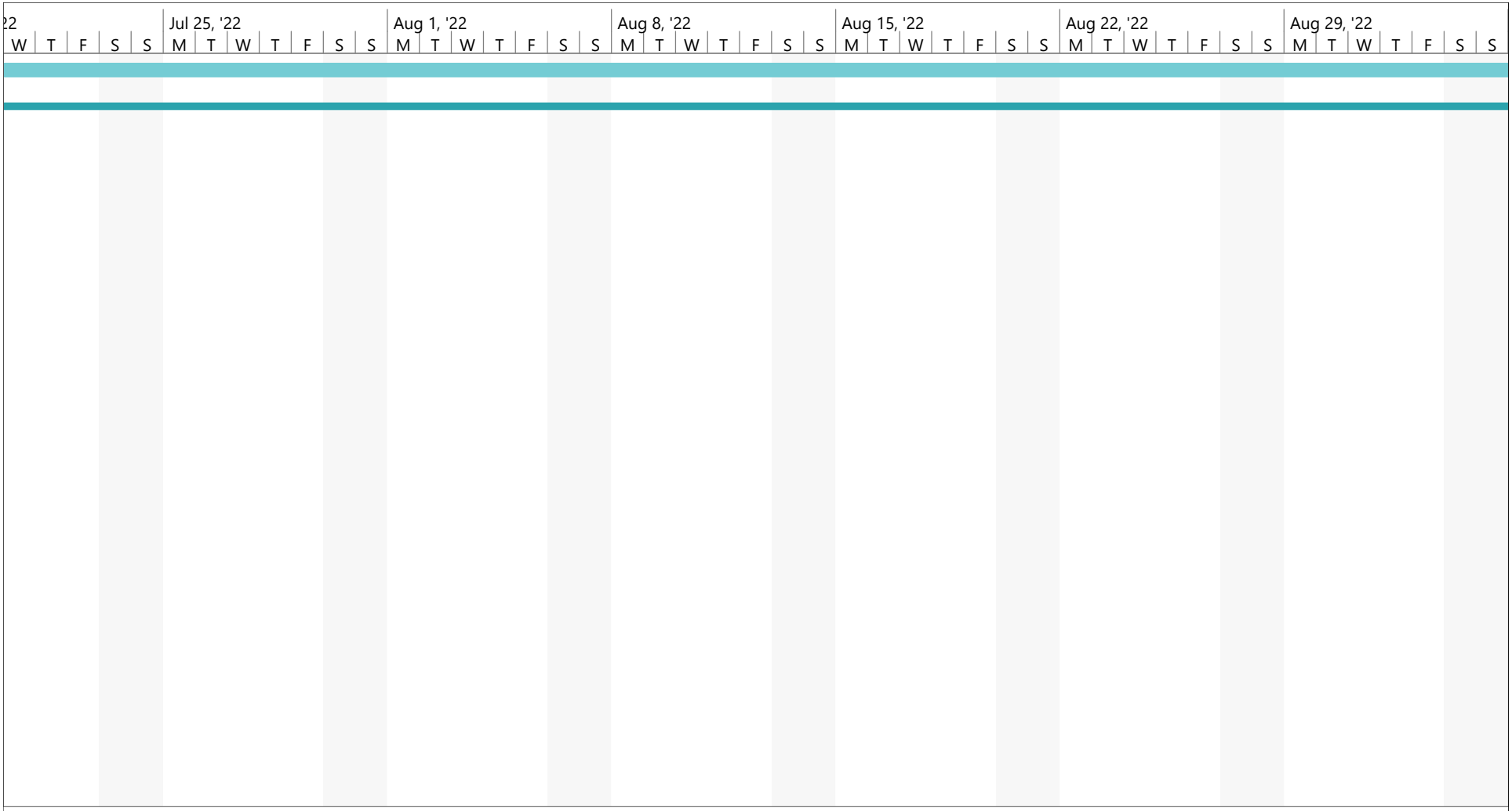

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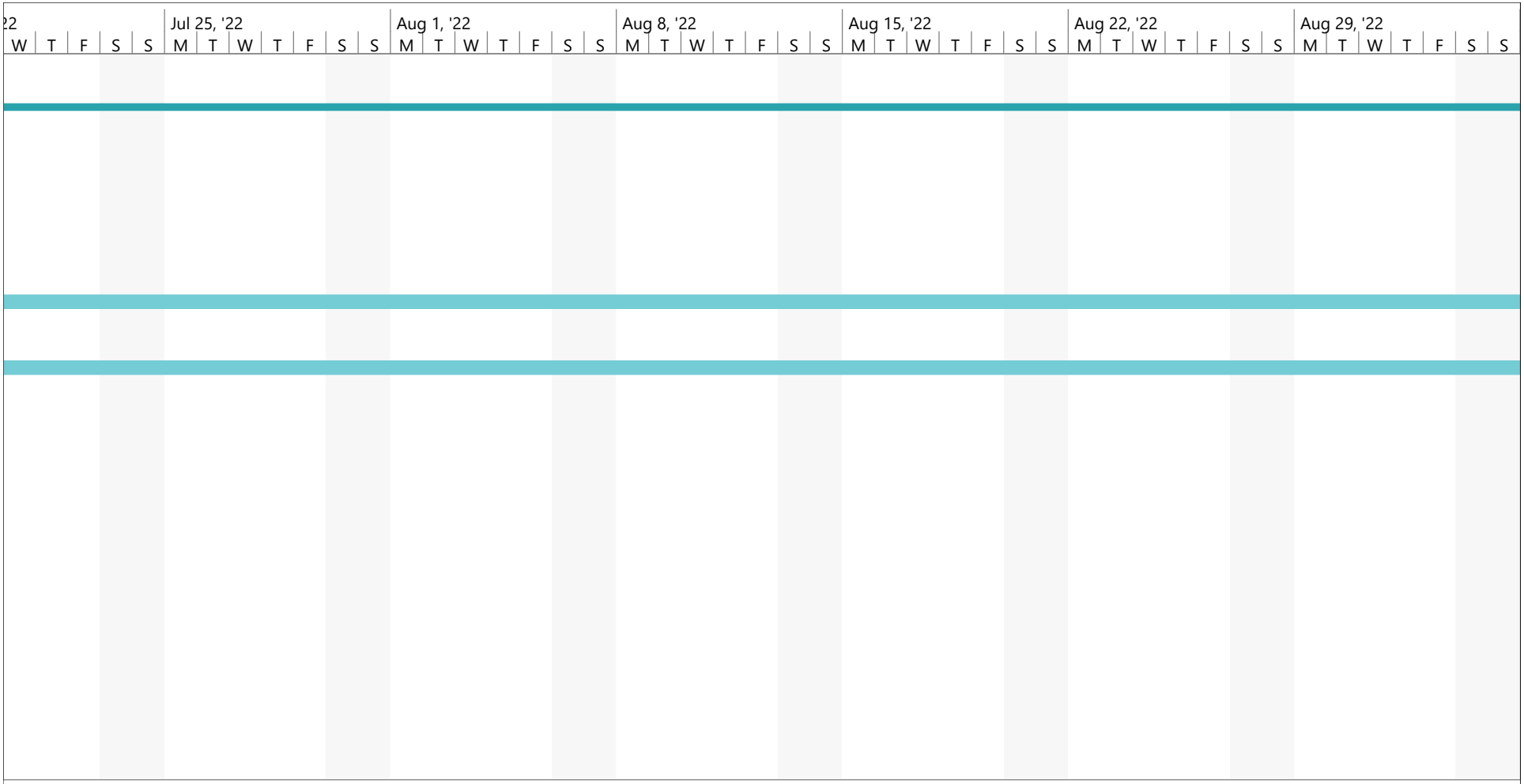

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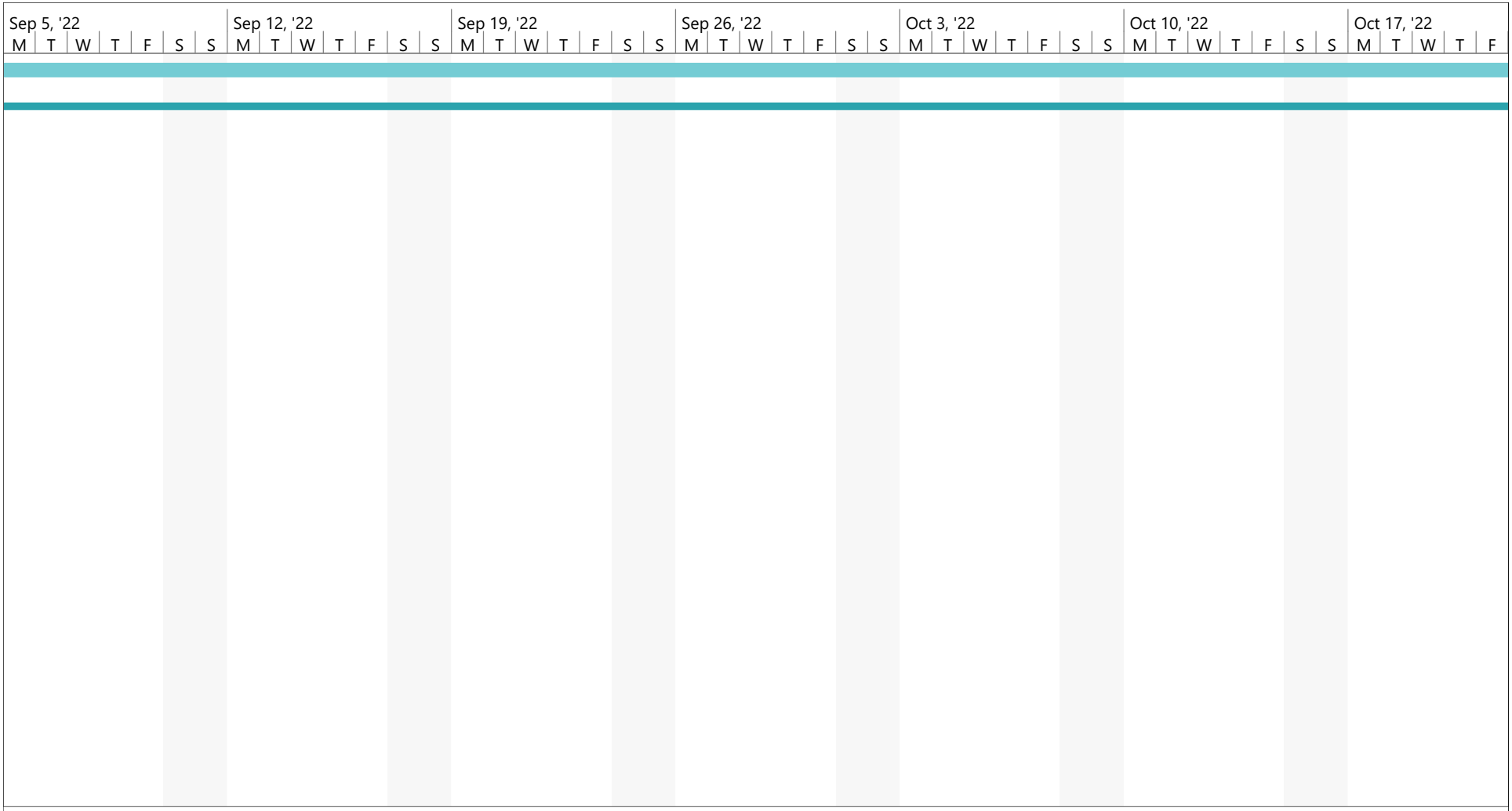

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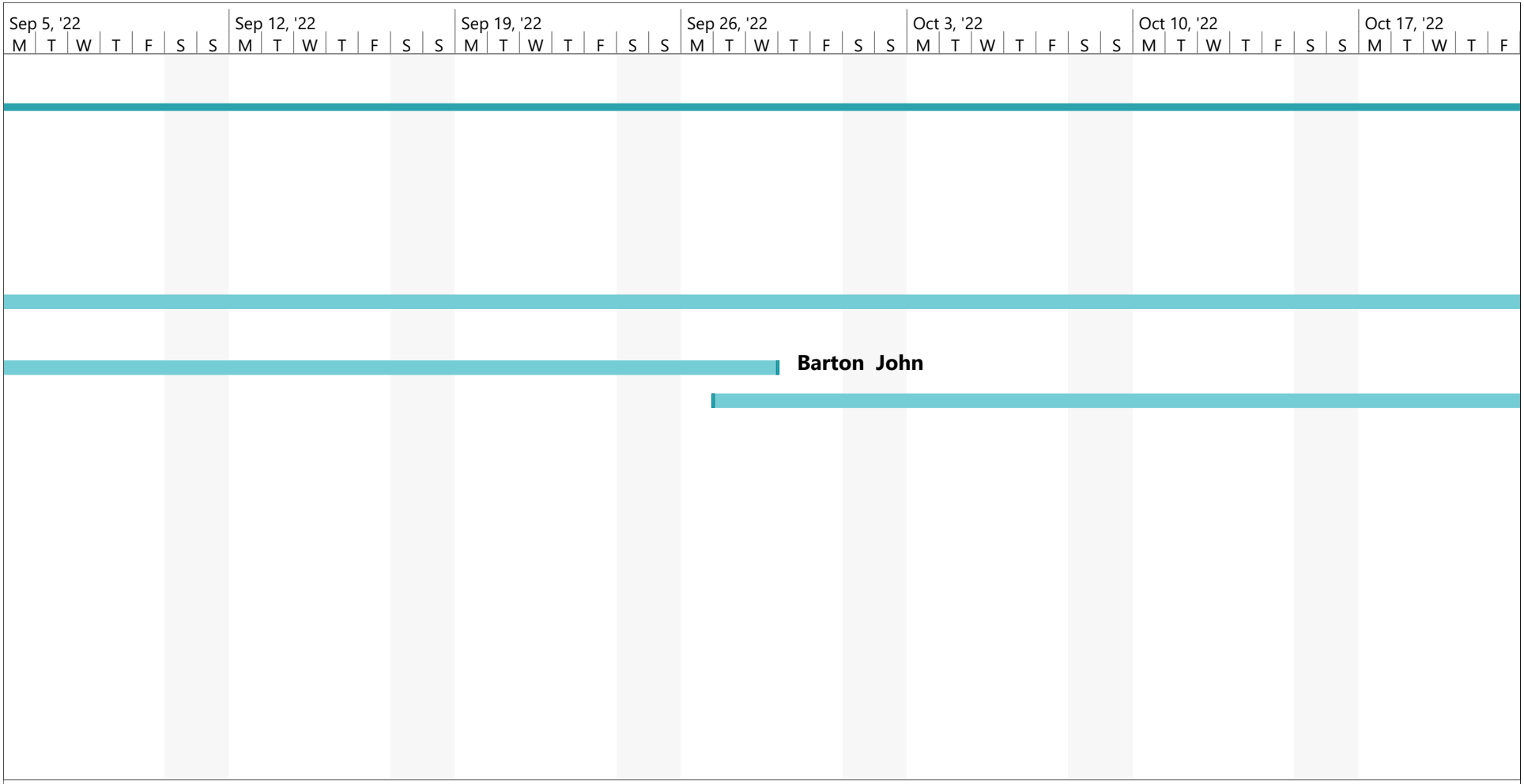

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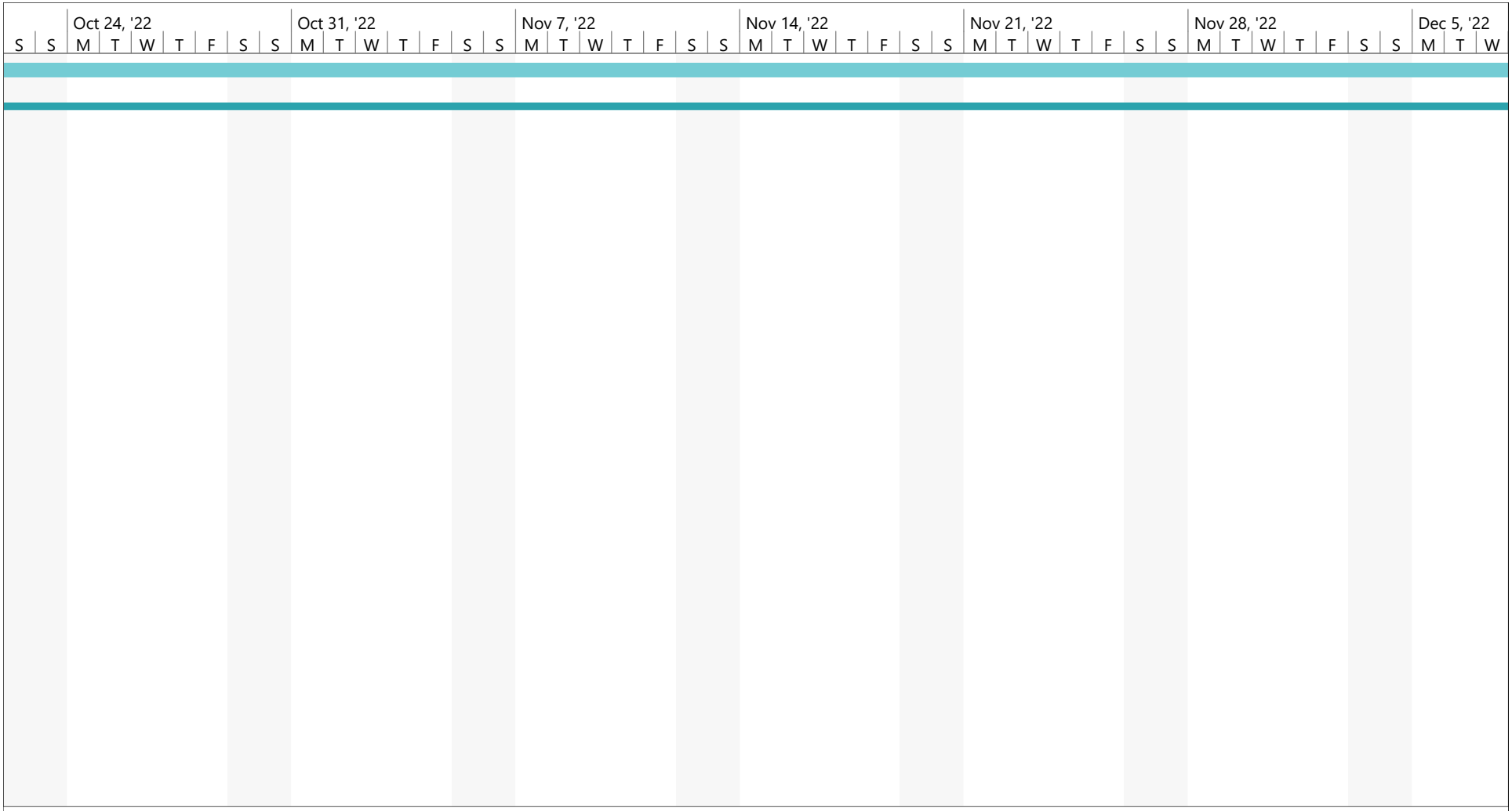

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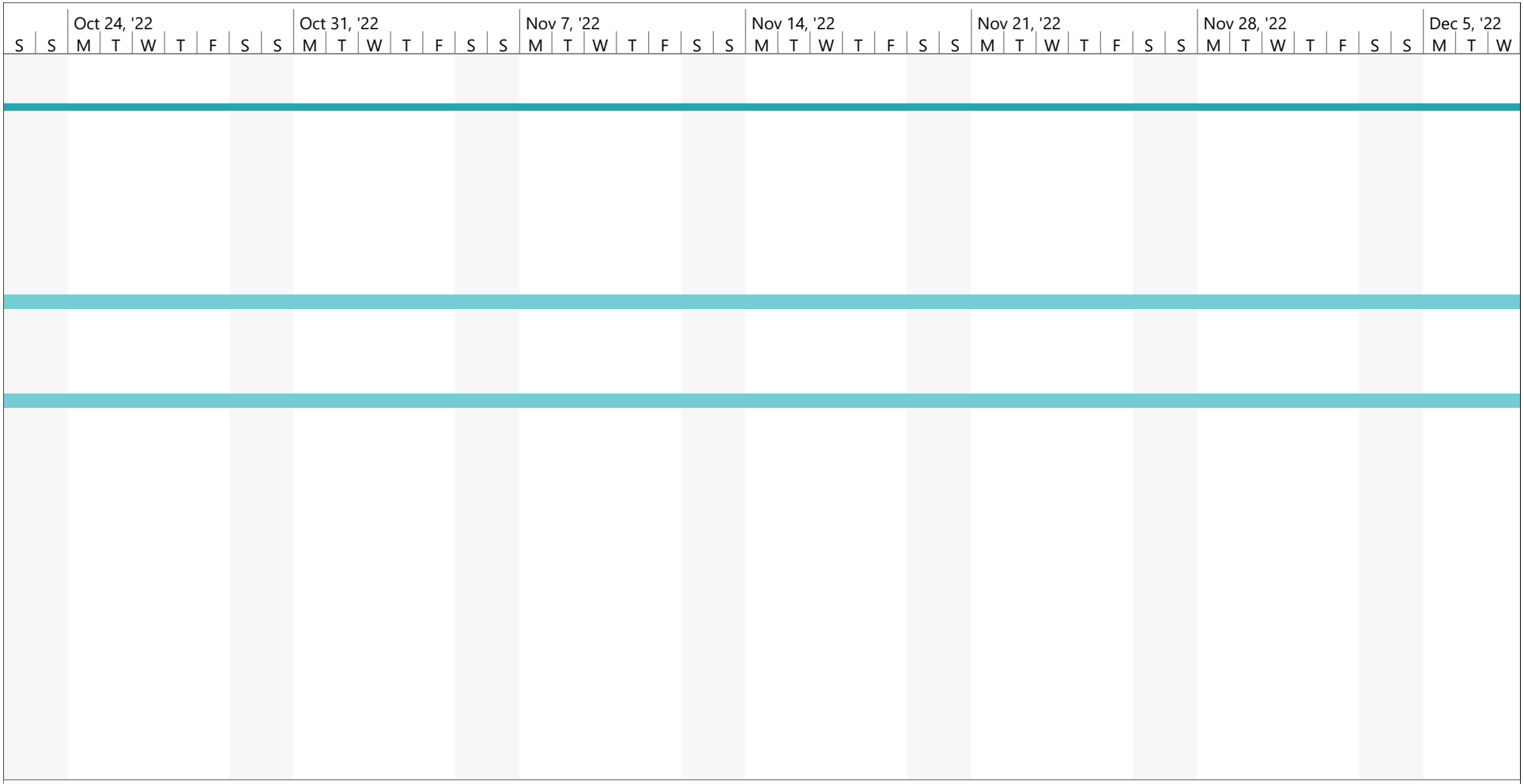

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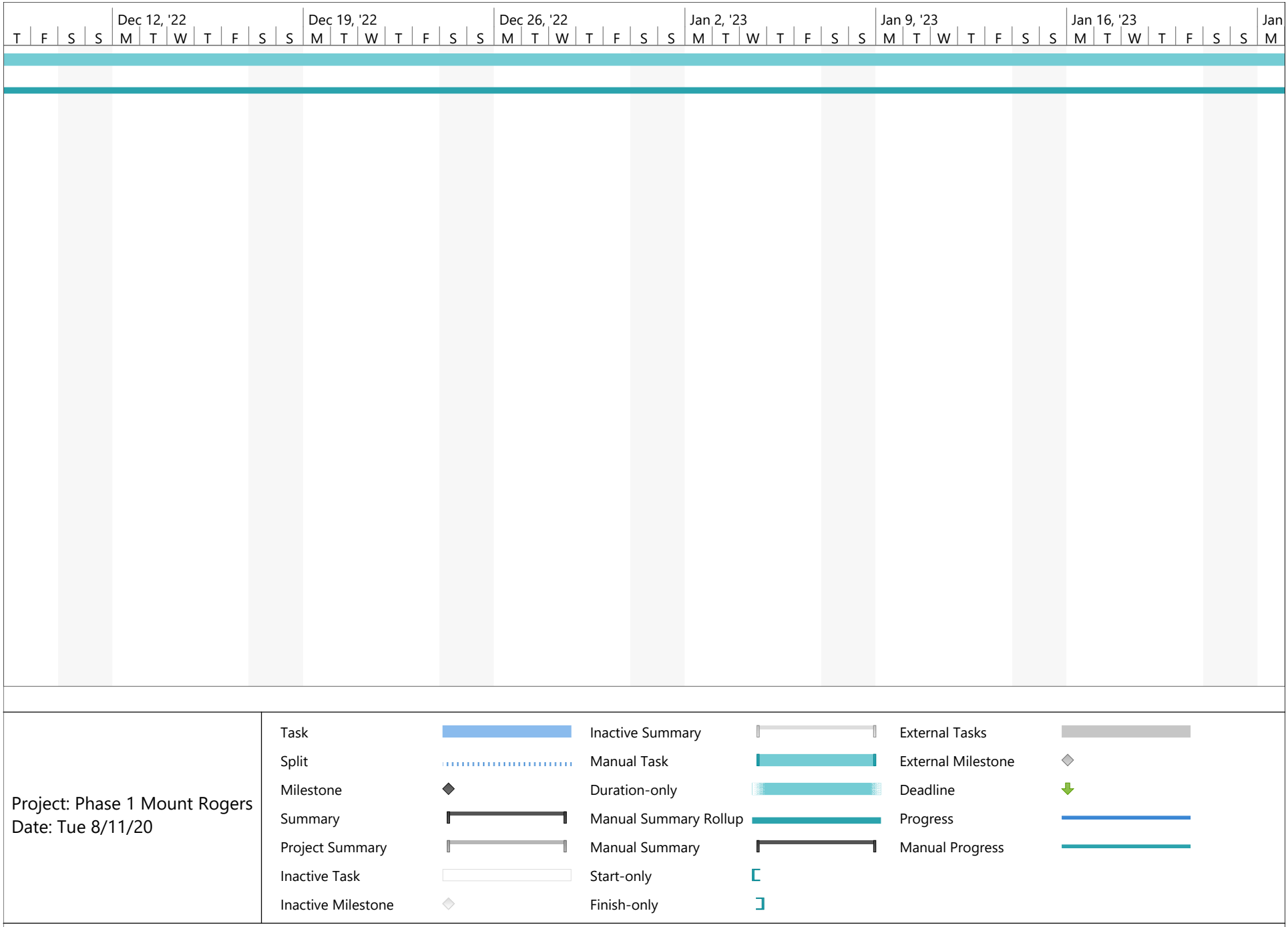

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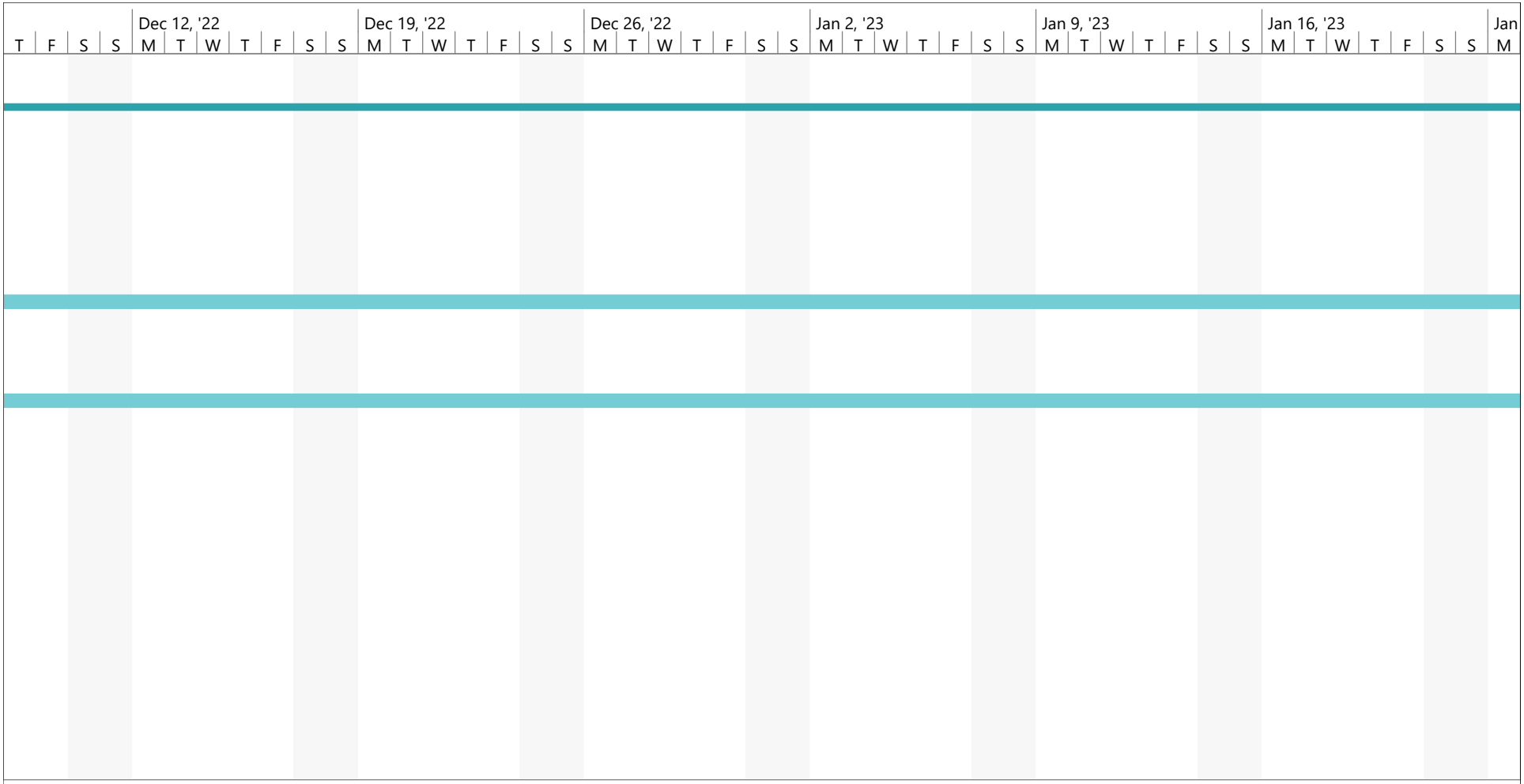

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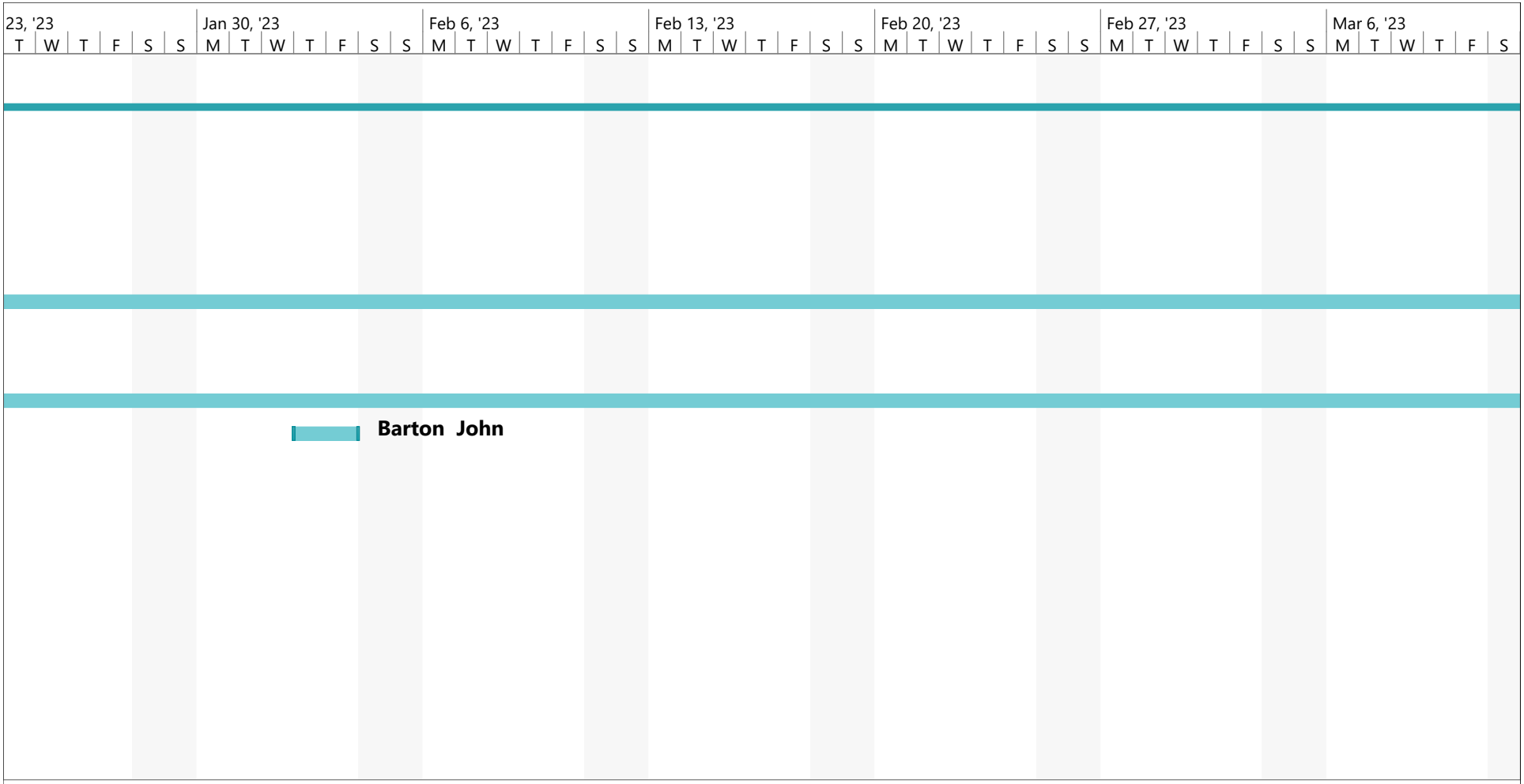

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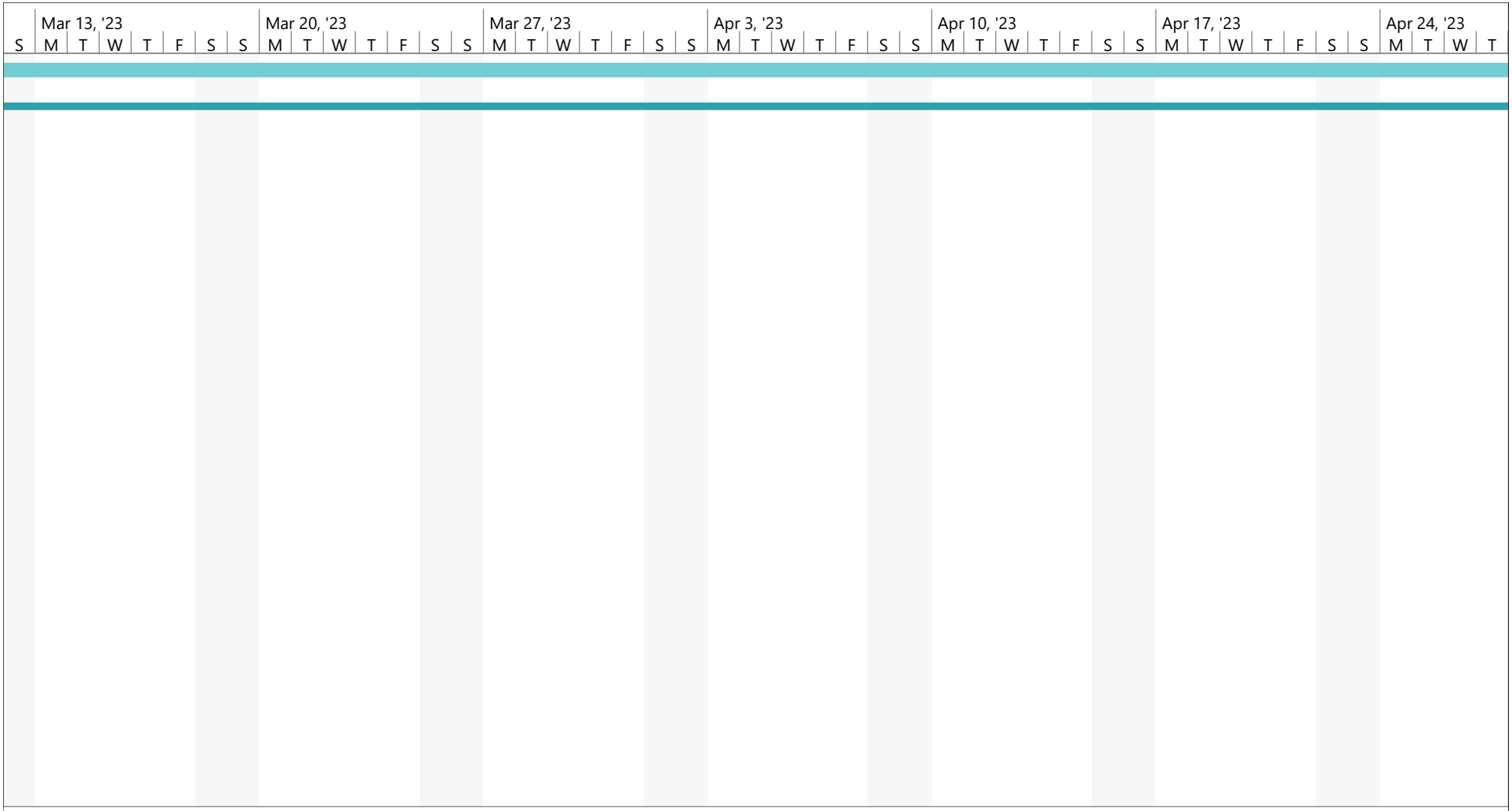

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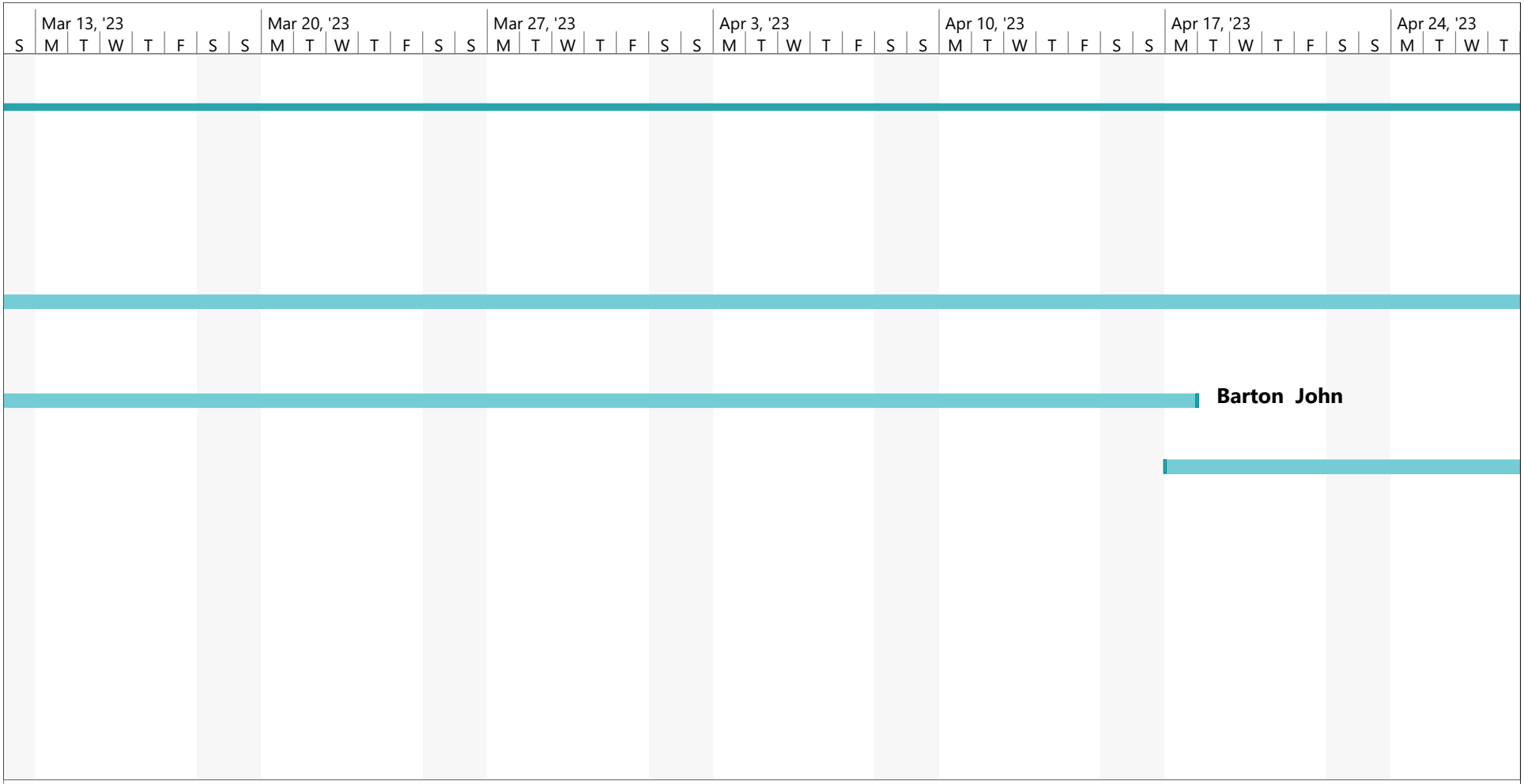

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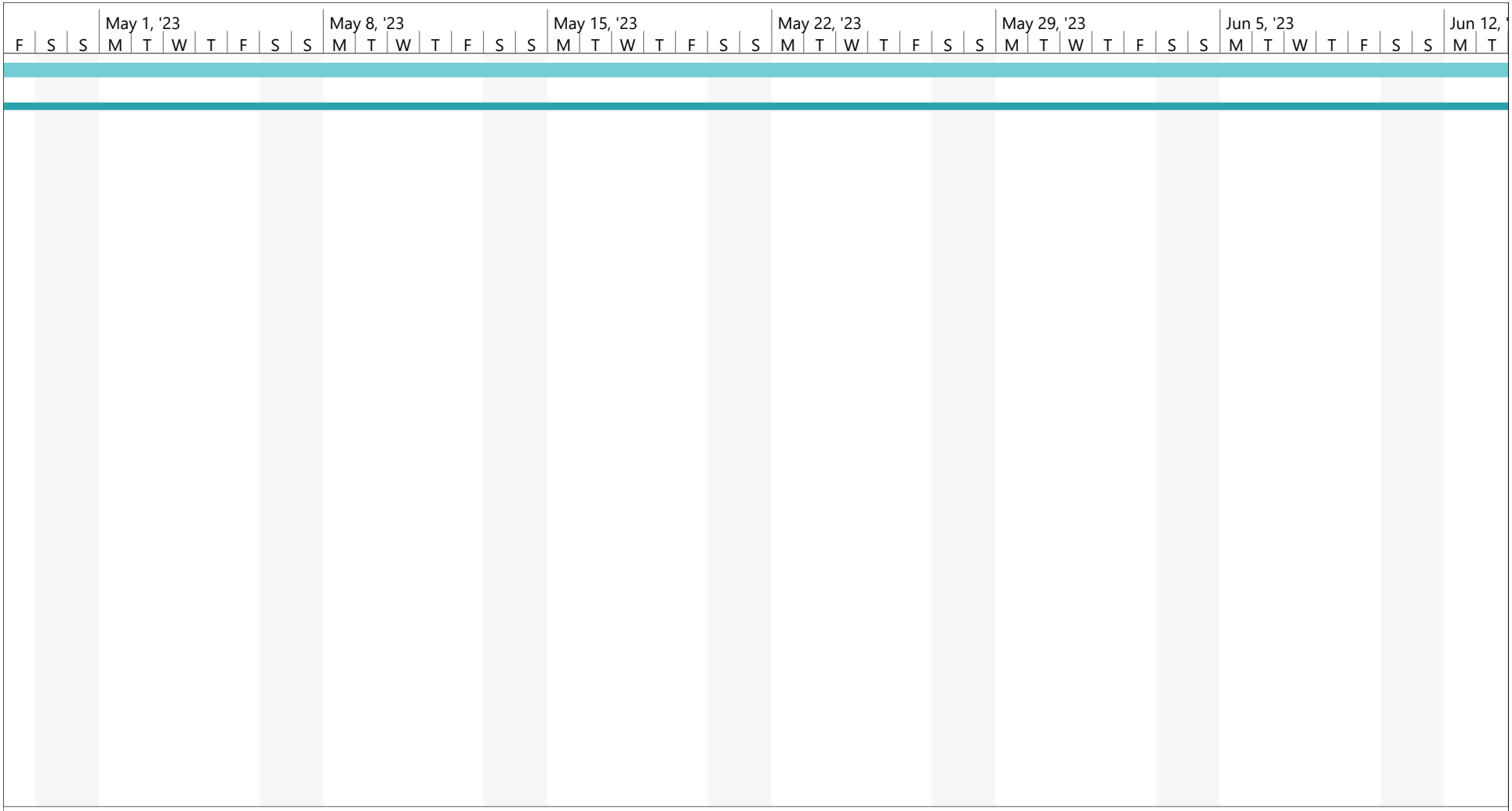

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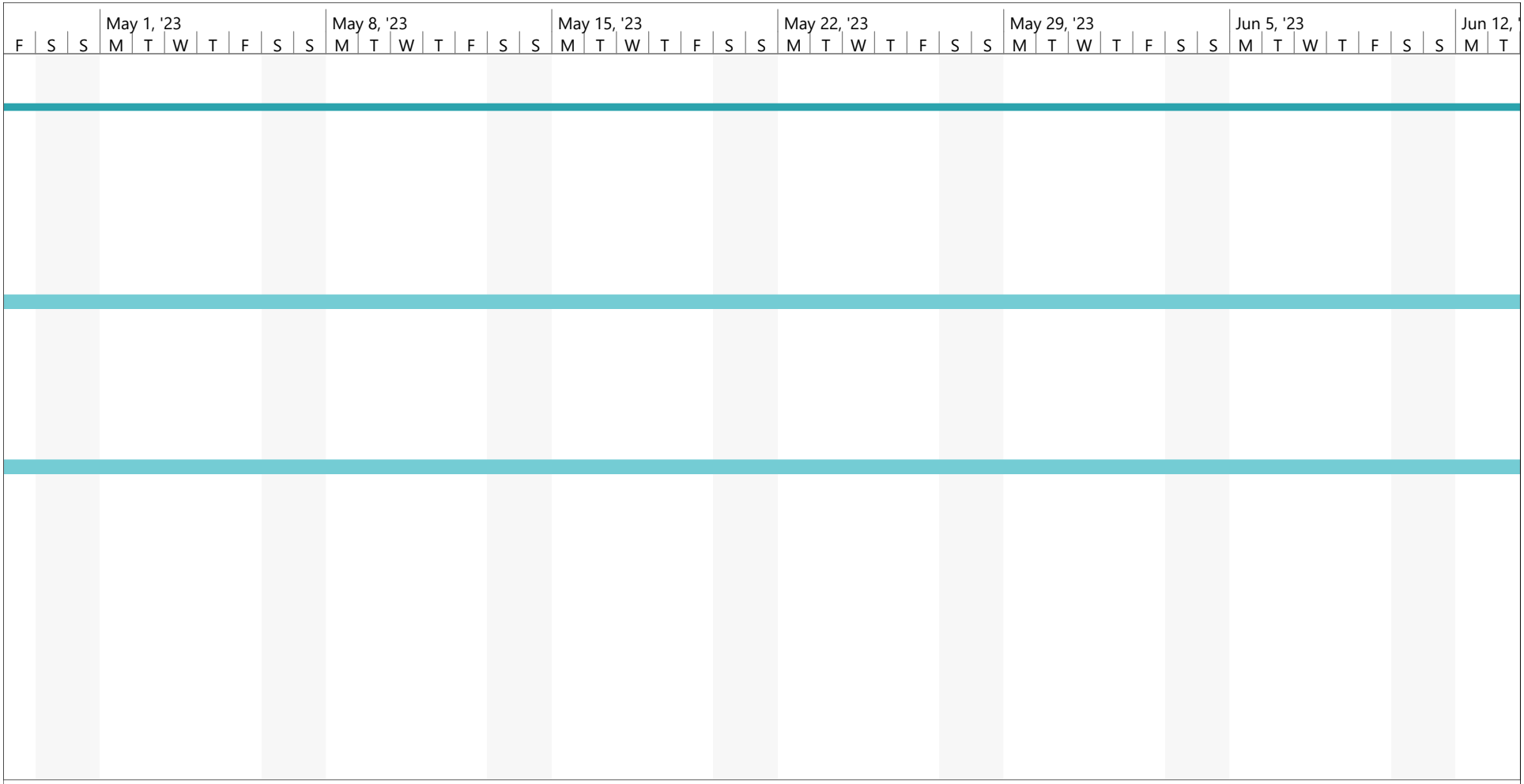

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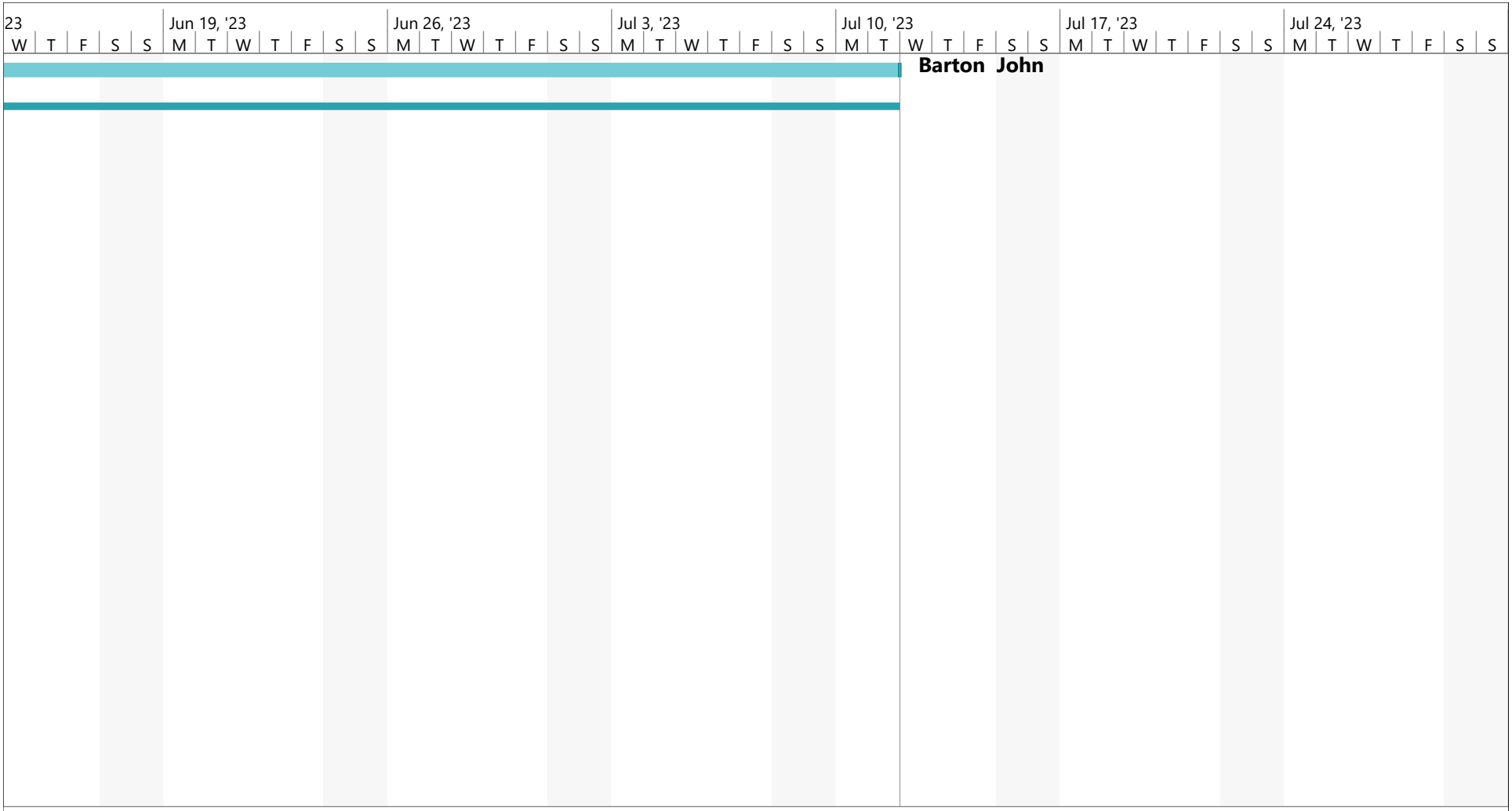

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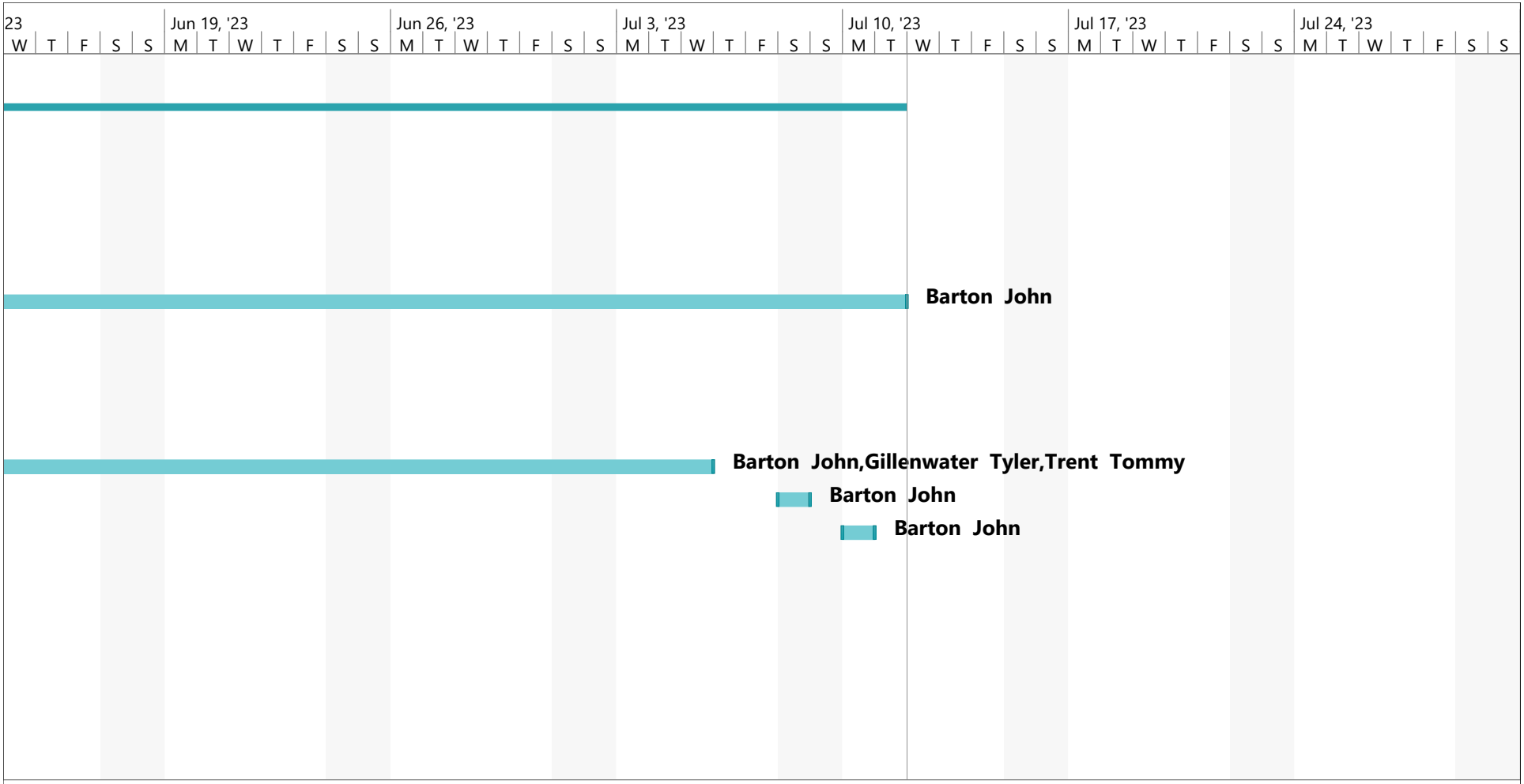

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ID	Task Mode	Task Name	Duration	Start	Finish
1		Phase 2 Mount Rogers	375 days	Wed 2/2/22	Tue 7/11/23
2		**Field Engineering**			
3		Field Data Collection	5 days	Wed 2/2/22	Tue 2/8/22
4		Site Survey	3 days	Tue 2/8/22	Thu 2/10/22
5		Premitting Applications	5 days	Thu 2/10/22	Wed 2/16/22
6		Pole Data	3 days	Thu 2/10/22	Mon 2/14/22
7		Make Ready Summary	1 day	Thu 2/10/22	Thu 2/10/22
8		Easements Identified	1 day	Tue 2/8/22	Tue 2/8/22
9					
10		**Facilities**			
11		Splice Package	1 day	Wed 2/2/22	Wed 2/2/22
12		Rainbows BOM	5 days	Mon 2/14/22	Fri 2/18/22
13		Estimate Workbook	1 day	Mon 2/14/22	Mon 2/14/22
14		Job Approval	1 day	Mon 2/14/22	Mon 2/14/22
15					
16		**Permits & Make-Ready**			
17		Permit Application & Invoicing	1 day	Wed 2/2/22	Wed 2/2/22
18		Towns or City Permit	0 days		
19		Make Ready Construction	1 day	Tue 2/8/22	Tue 2/8/22
20		AEP	1 day	Tue 2/8/22	Tue 2/8/22
21		Verizon	1 day	Tue 2/8/22	Tue 2/8/22
22		PVEC			
23		ODP			

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ID	Task Mode	Task Name	Duration	Start	Finish
24					
25		**Construction Task**			
26		Review Job Package	1 day	Mon 2/14/22	Mon 2/14/22
27		Assigned Contractor	1 day	Mon 2/14/22	Mon 2/14/22
28		Create PO	0 days		
29		Stage Job Materials	1 day	Wed 1/5/22	Wed 1/5/22
30		Materials Requested	1 day	Mon 2/14/22	Mon 2/14/22
31		Consturction Start/Finish	375 days	Wed 2/2/22	Tue 7/11/23
32		Make Ready	50 days	Mon 2/14/22	Fri 4/22/22
33		Strand	120 days	Thu 4/14/22	Wed 9/28/22
34		Lash Fiber	145 days	Tue 9/27/22	Mon 4/17/23
35		Cabinet Set	2 days	Thu 2/2/23	Fri 2/3/23
36		Splicing	58 days	Mon 4/17/23	Wed 7/5/23
37		Redlines	1 day	Sat 7/8/23	Sat 7/8/23
38		OTDR Results	1 day	Mon 7/10/23	Mon 7/10/23
39		Addresses for Project	1 day		
40					
41		**Closeout**			
42		Invoice			
43		Permits			
44		Materials Report			
45		Construction Manager Approvel			

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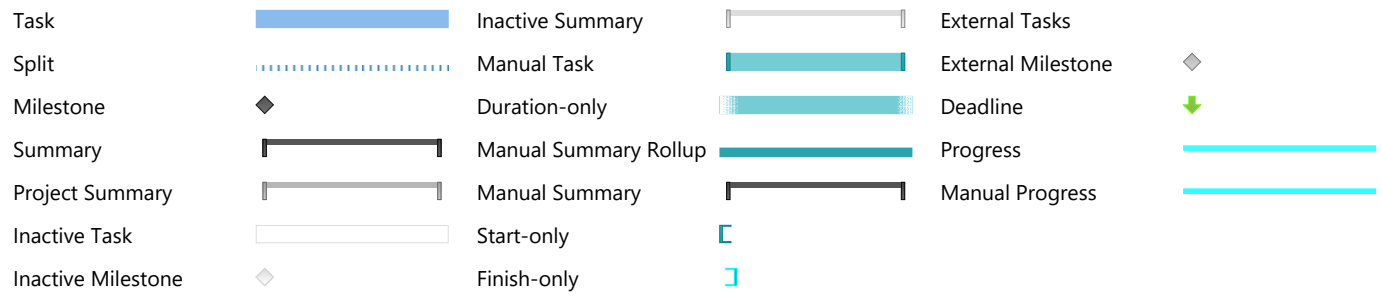
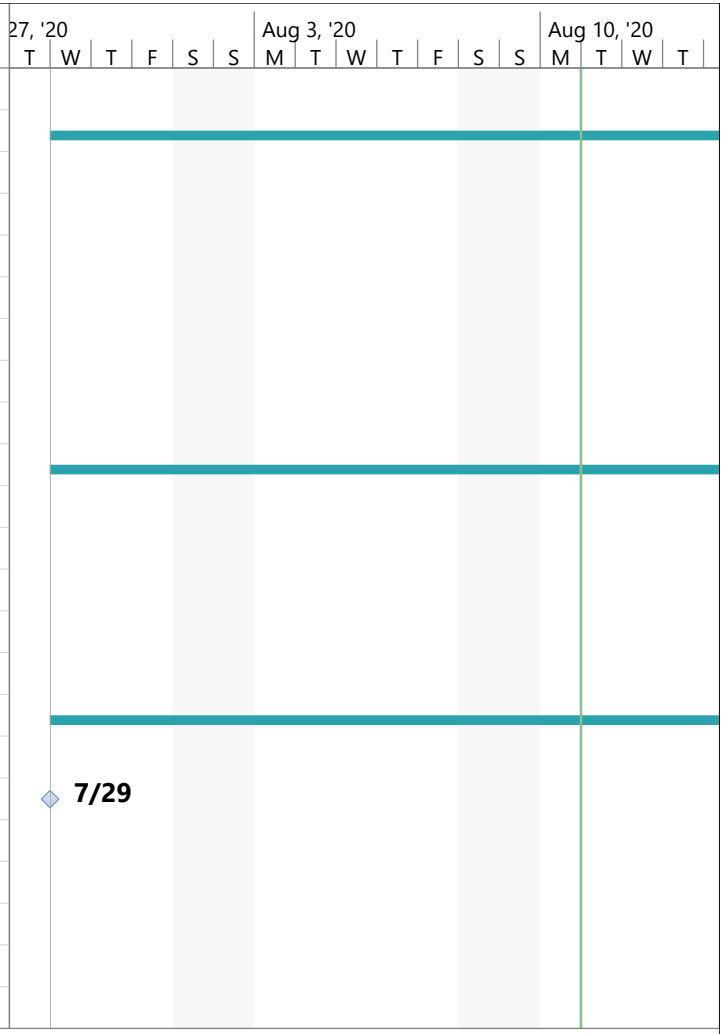


Resource Names	% Complete	Comments
Barton John	0%	
	0%	
Barton John,Hughes Kevin	0%	
Barton John	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
Gillenwater Tyler,Trent Tommy	0%	
Gillenwater Tyler	0%	
Tim Nutter	0%	
Tim Nutter	0%	
	0%	
Hughes Kevin	0%	
	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
	0%	



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Barton John,Tim Nutter	0%	
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	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
	0%	
	0%	
	0%	
	0%	
Barton John,Gillenwater Tyler,Trent Tommy	0%	
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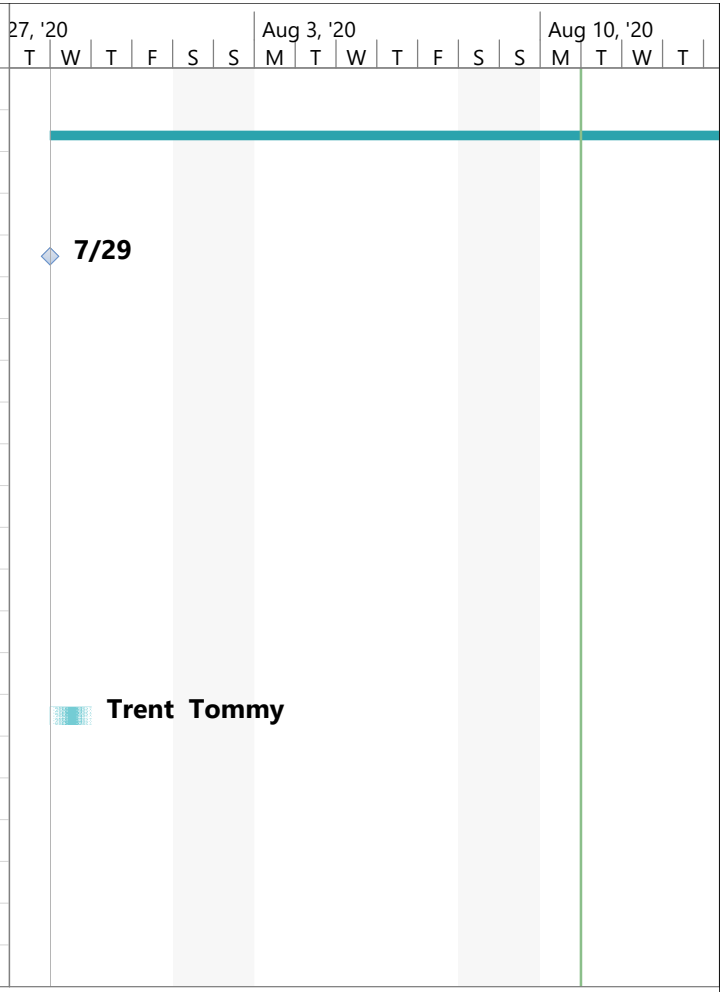

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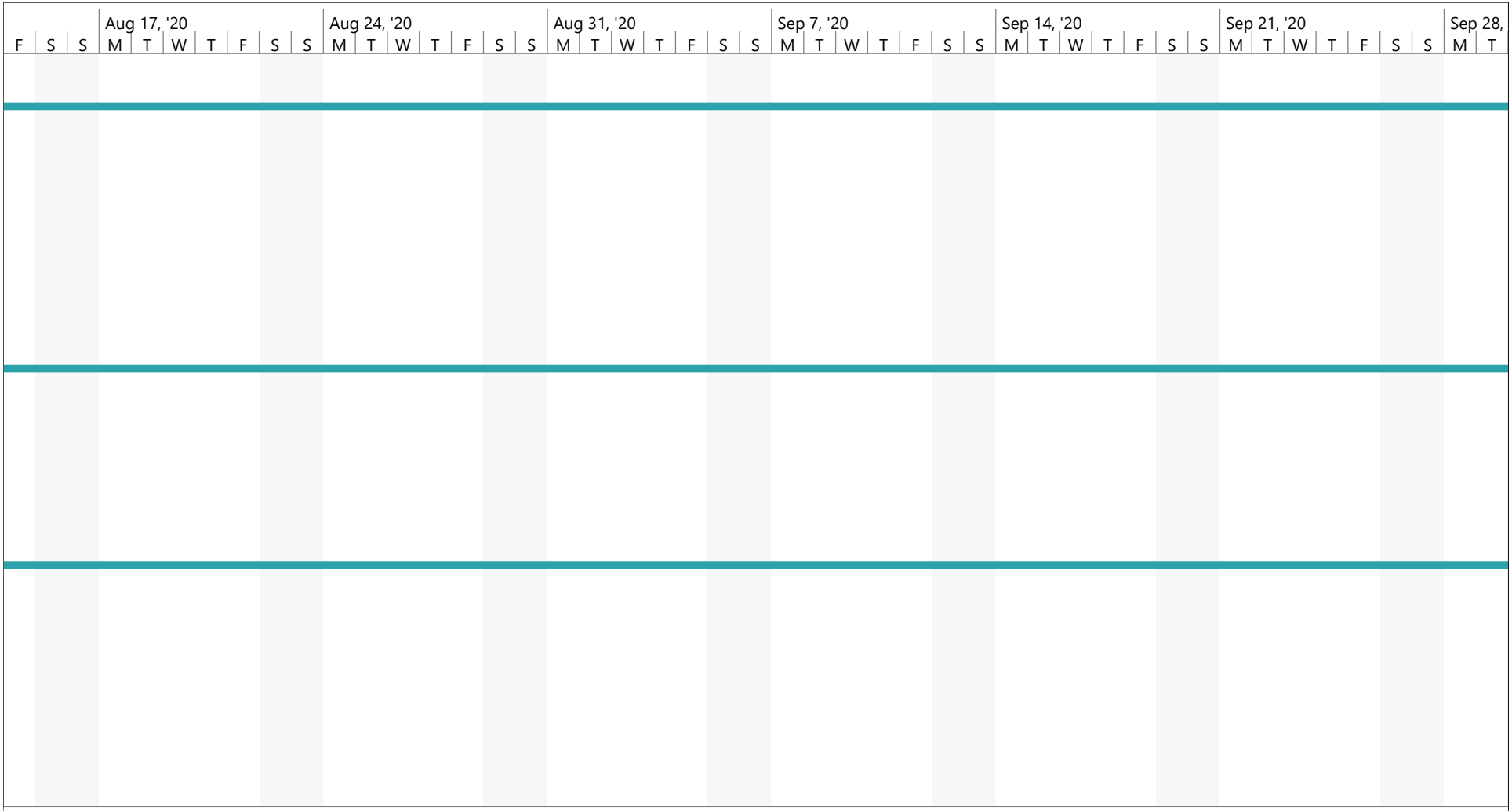

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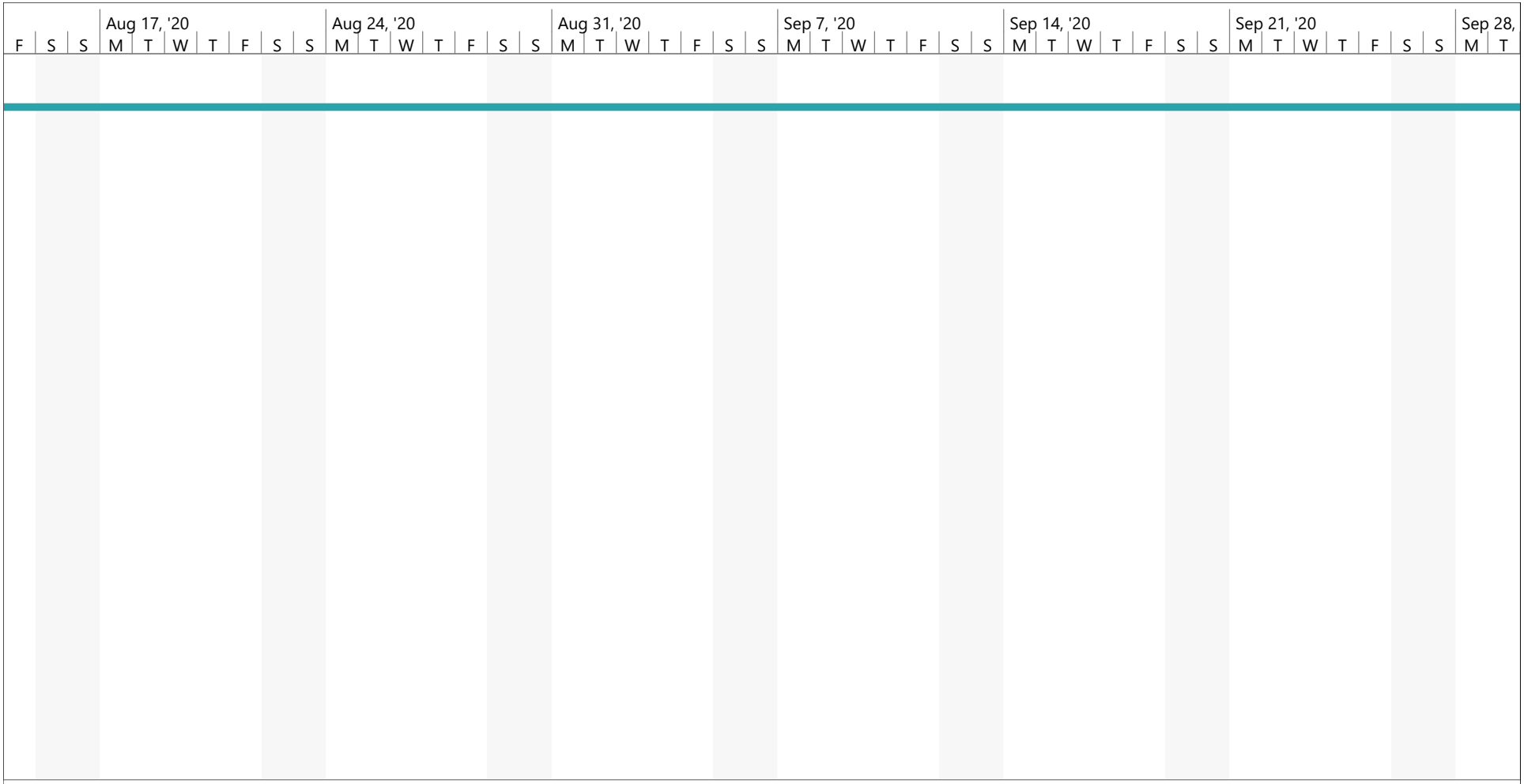

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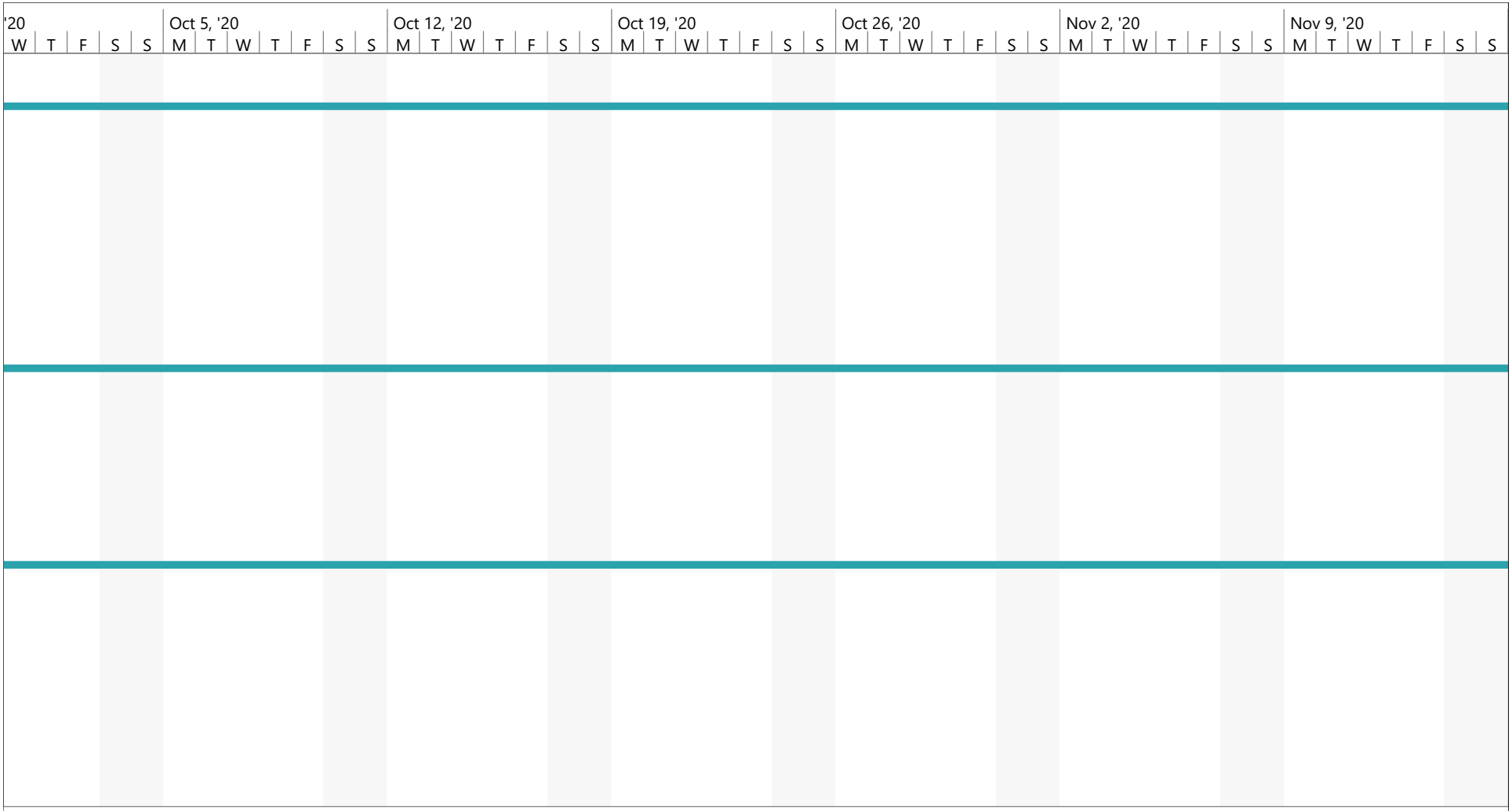

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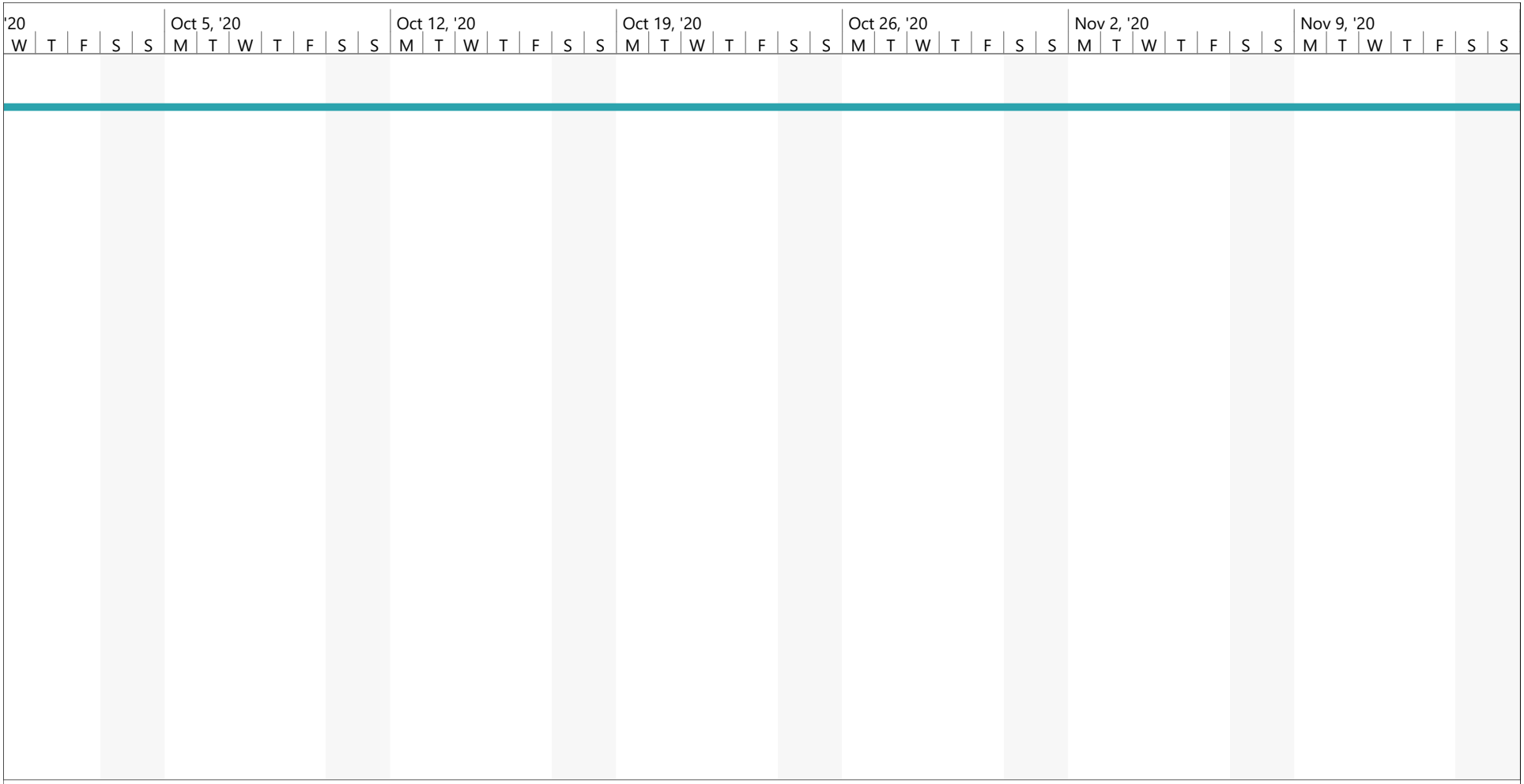

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Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Progress	
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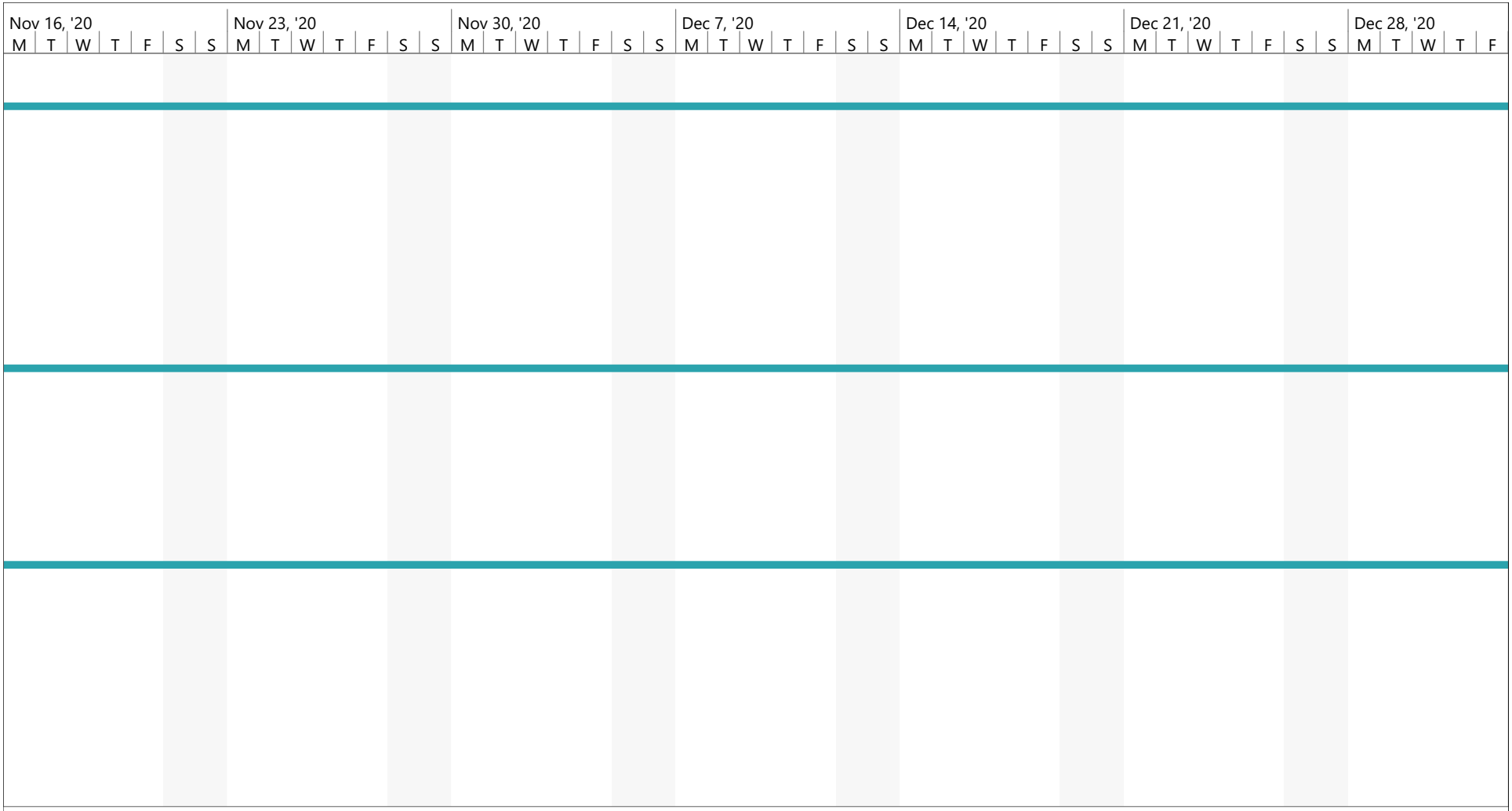

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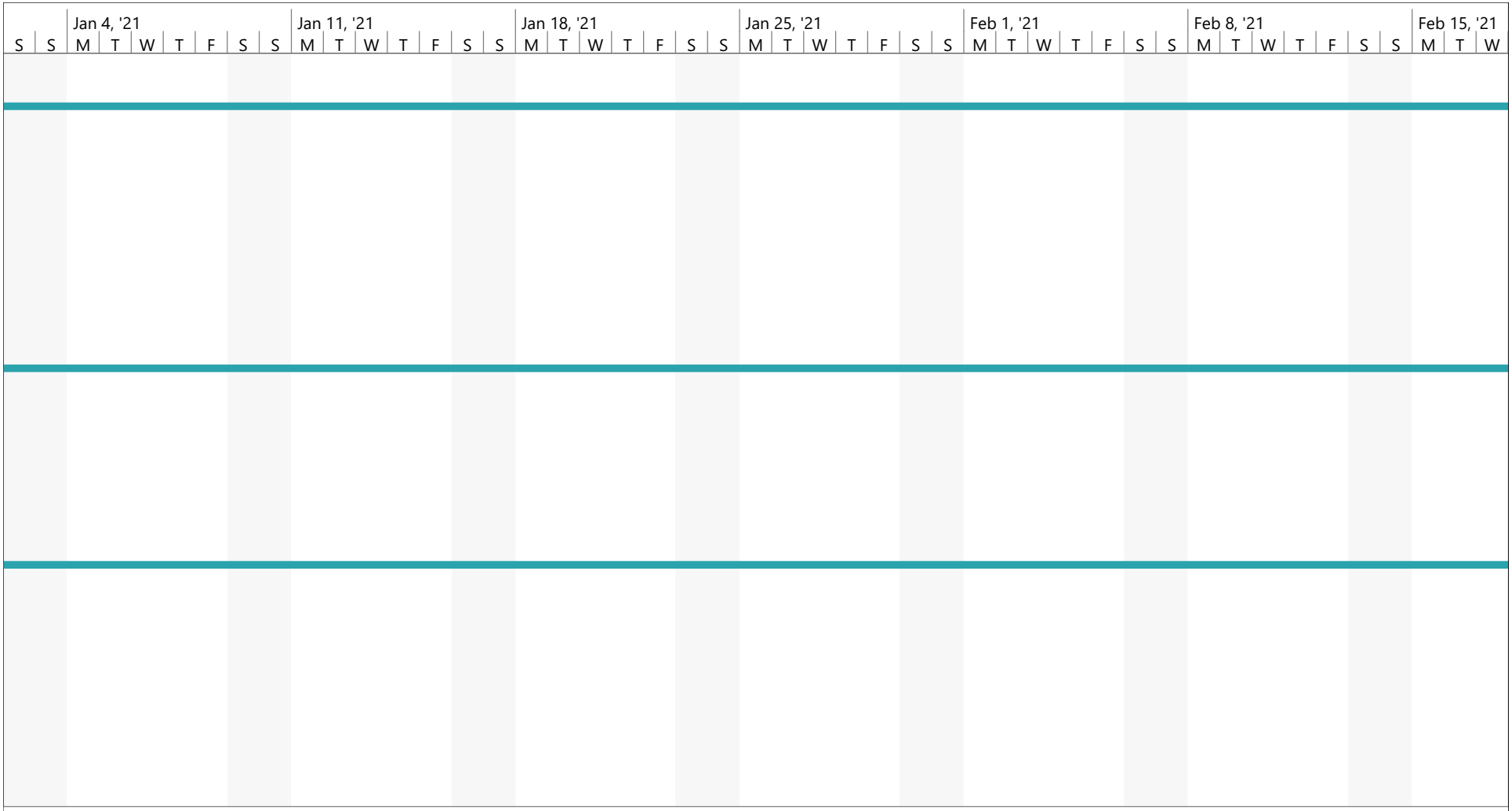

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Task	Inactive Summary	External Tasks
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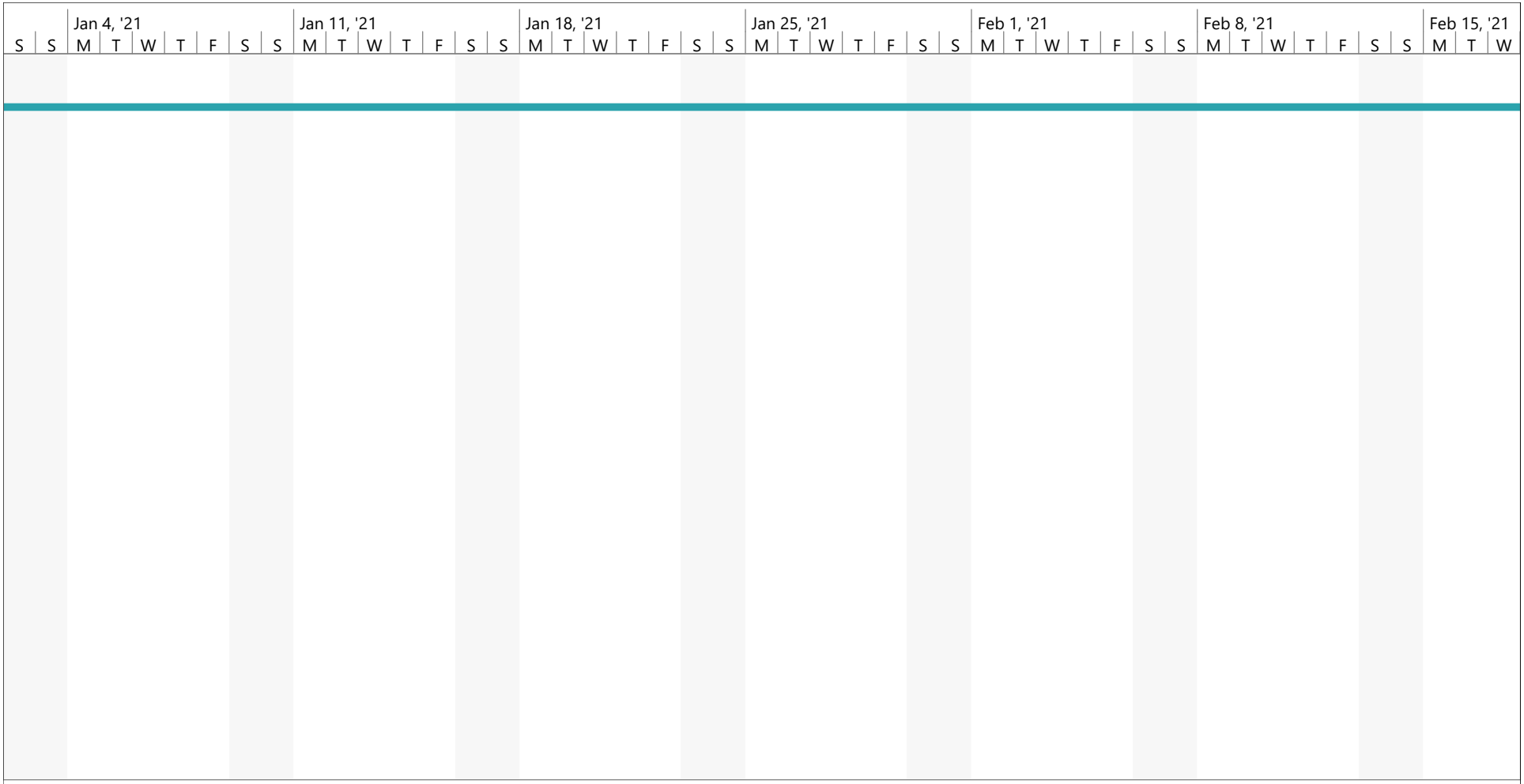

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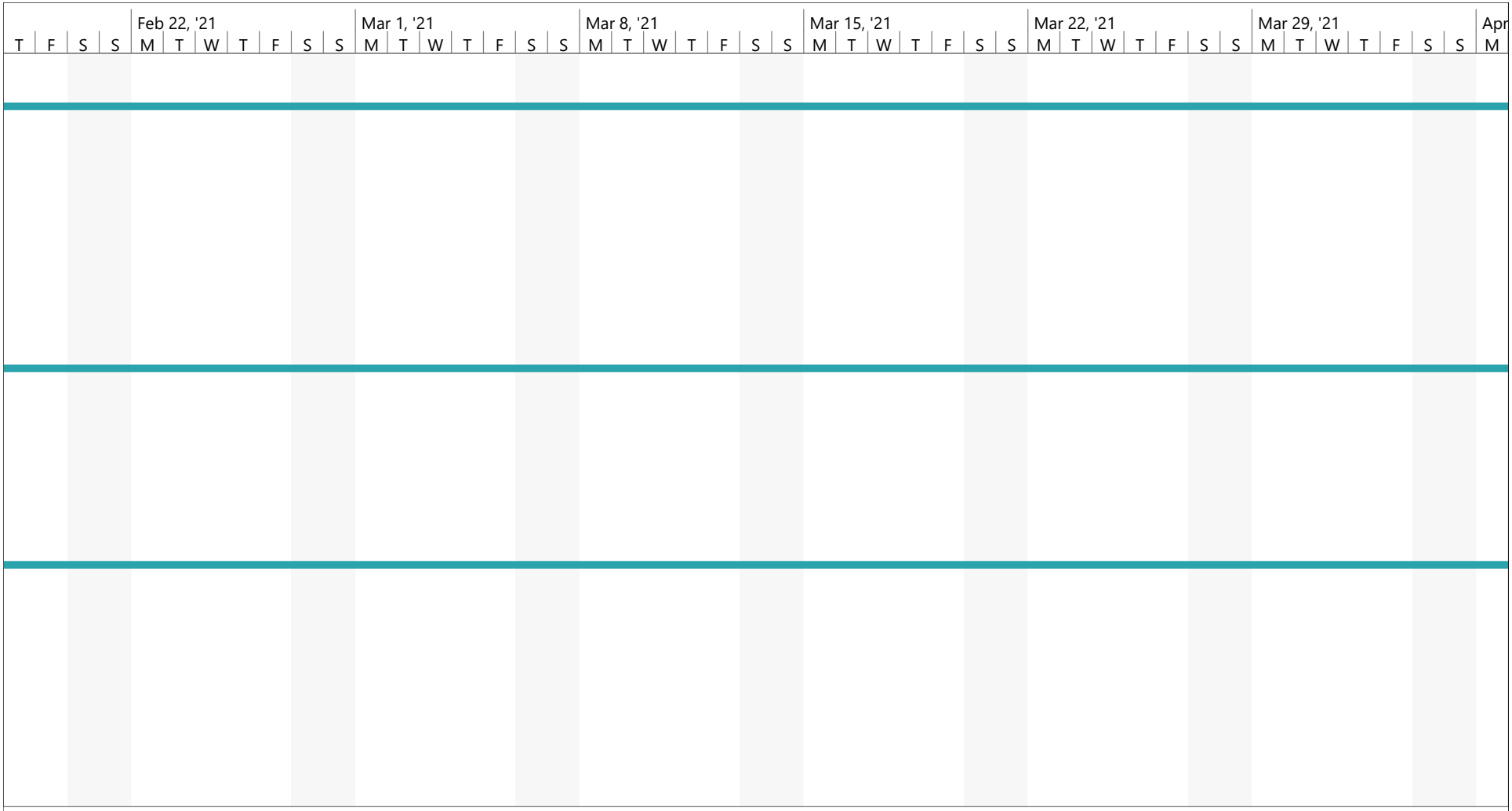

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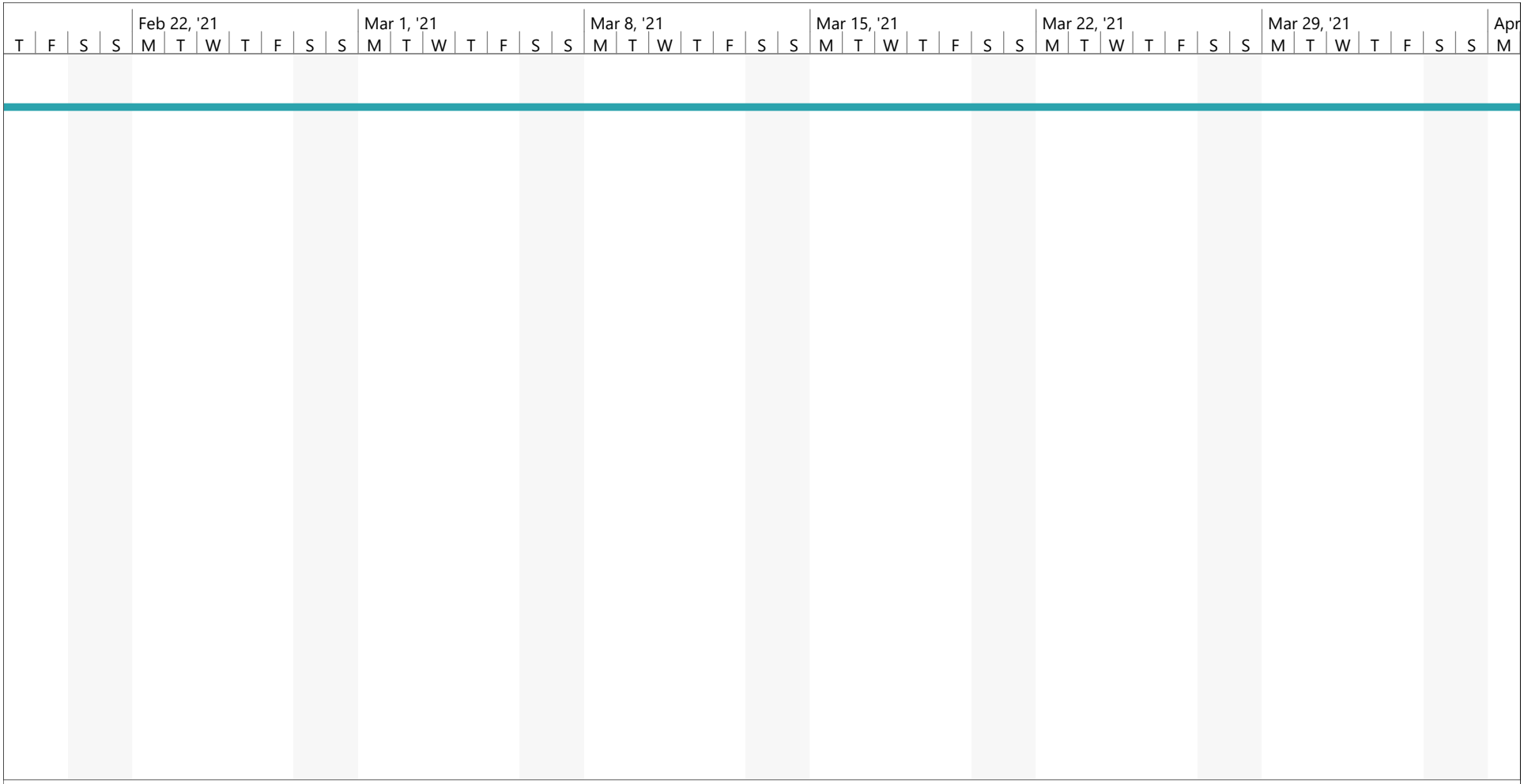

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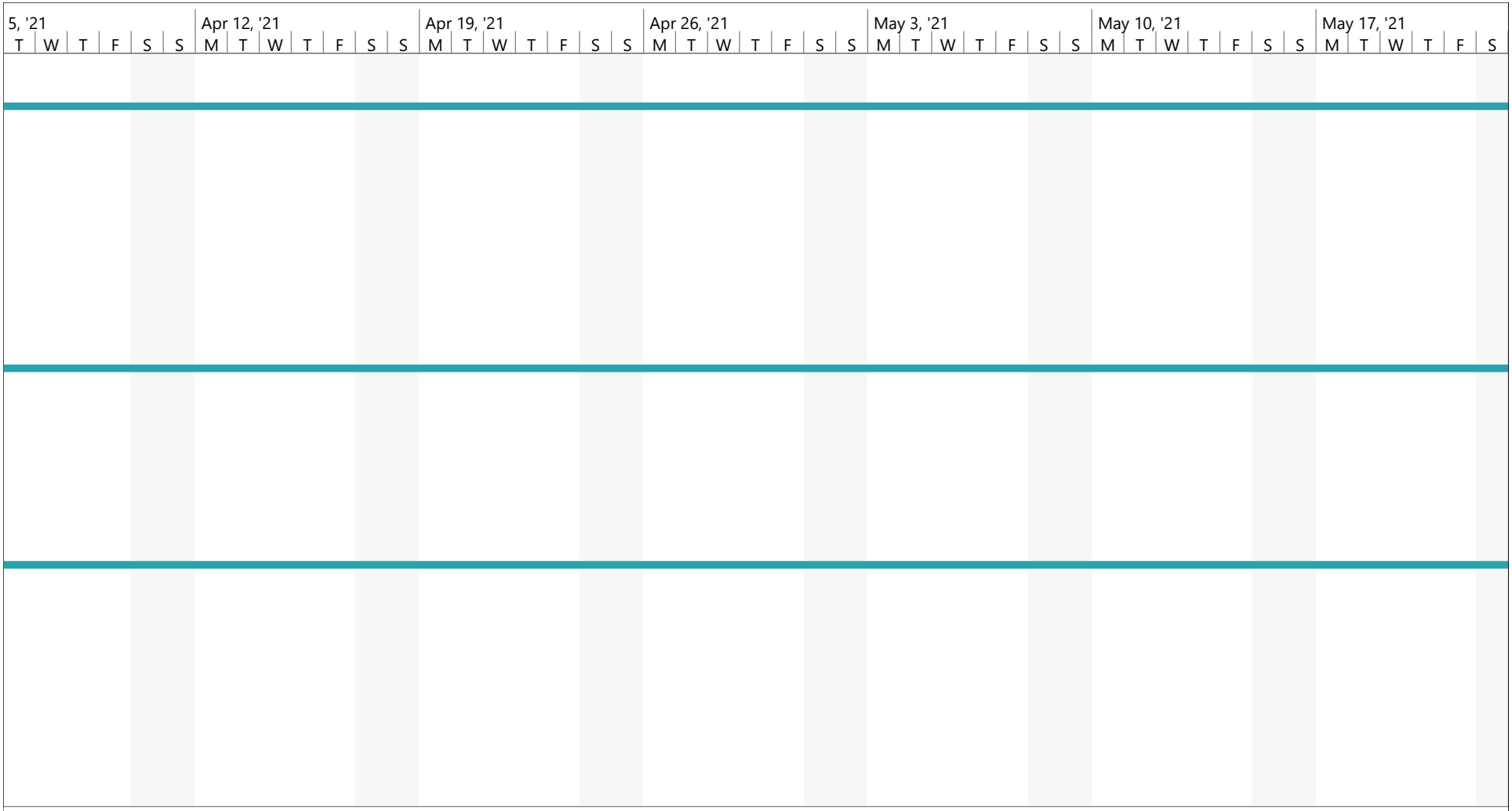

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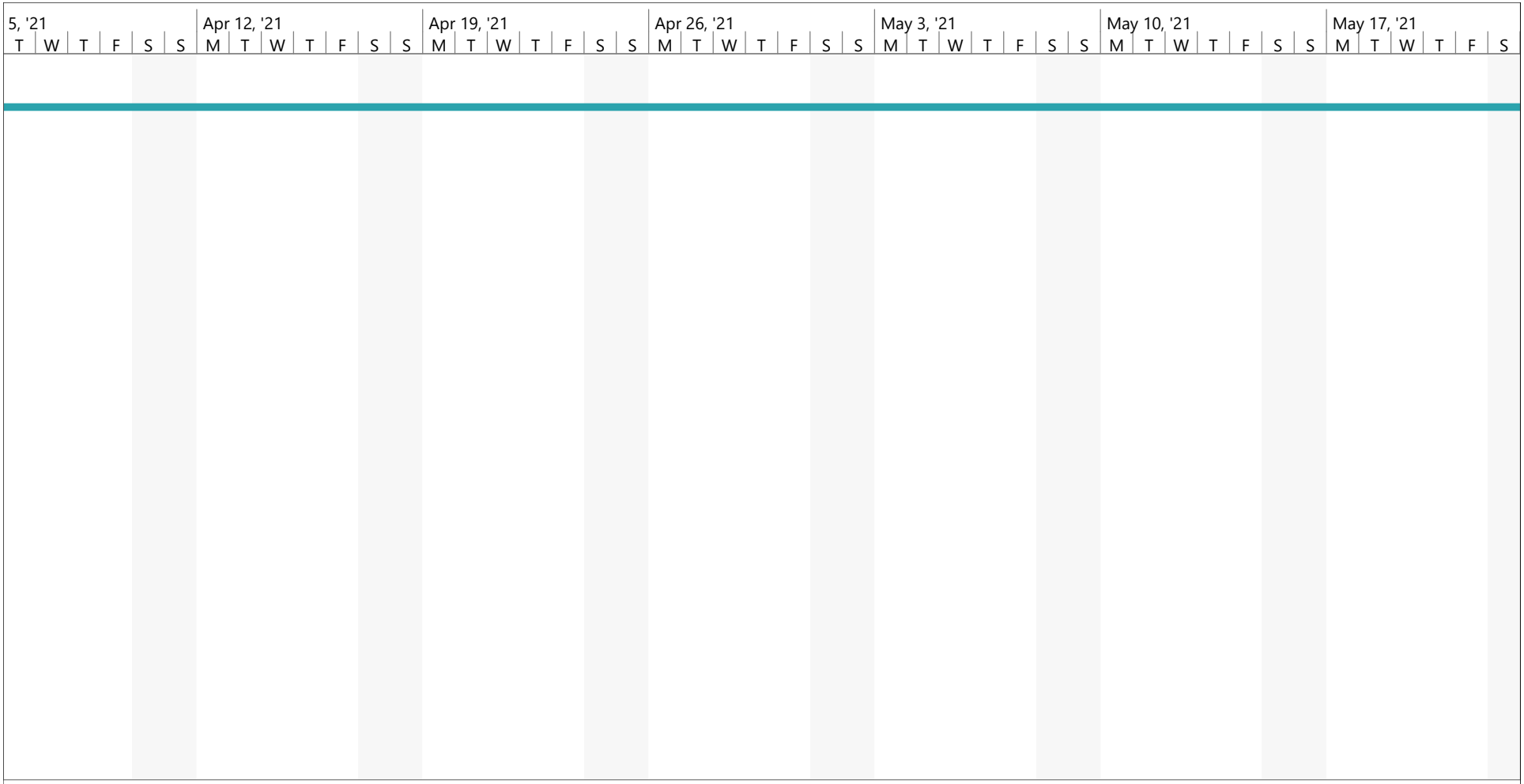

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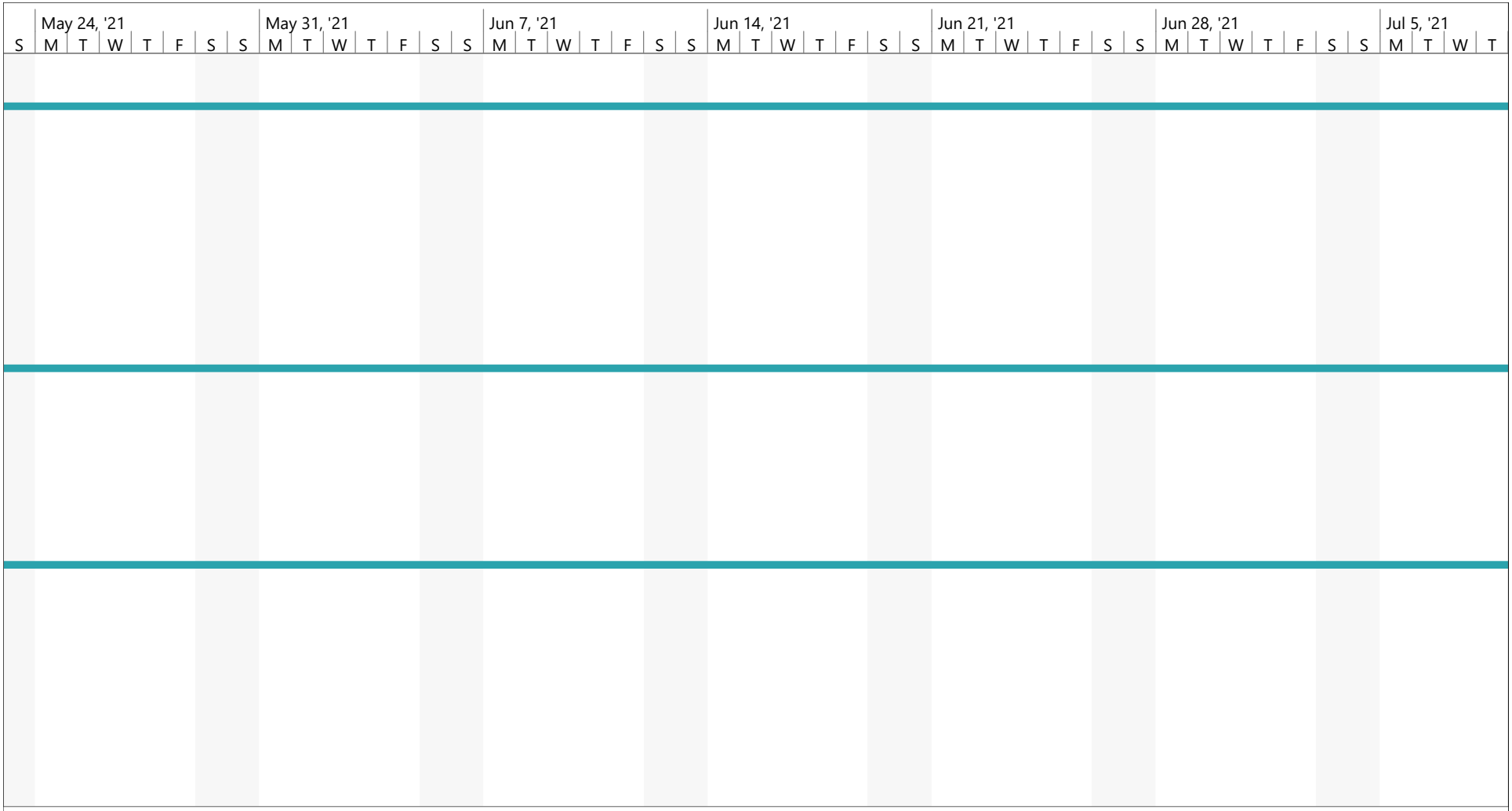

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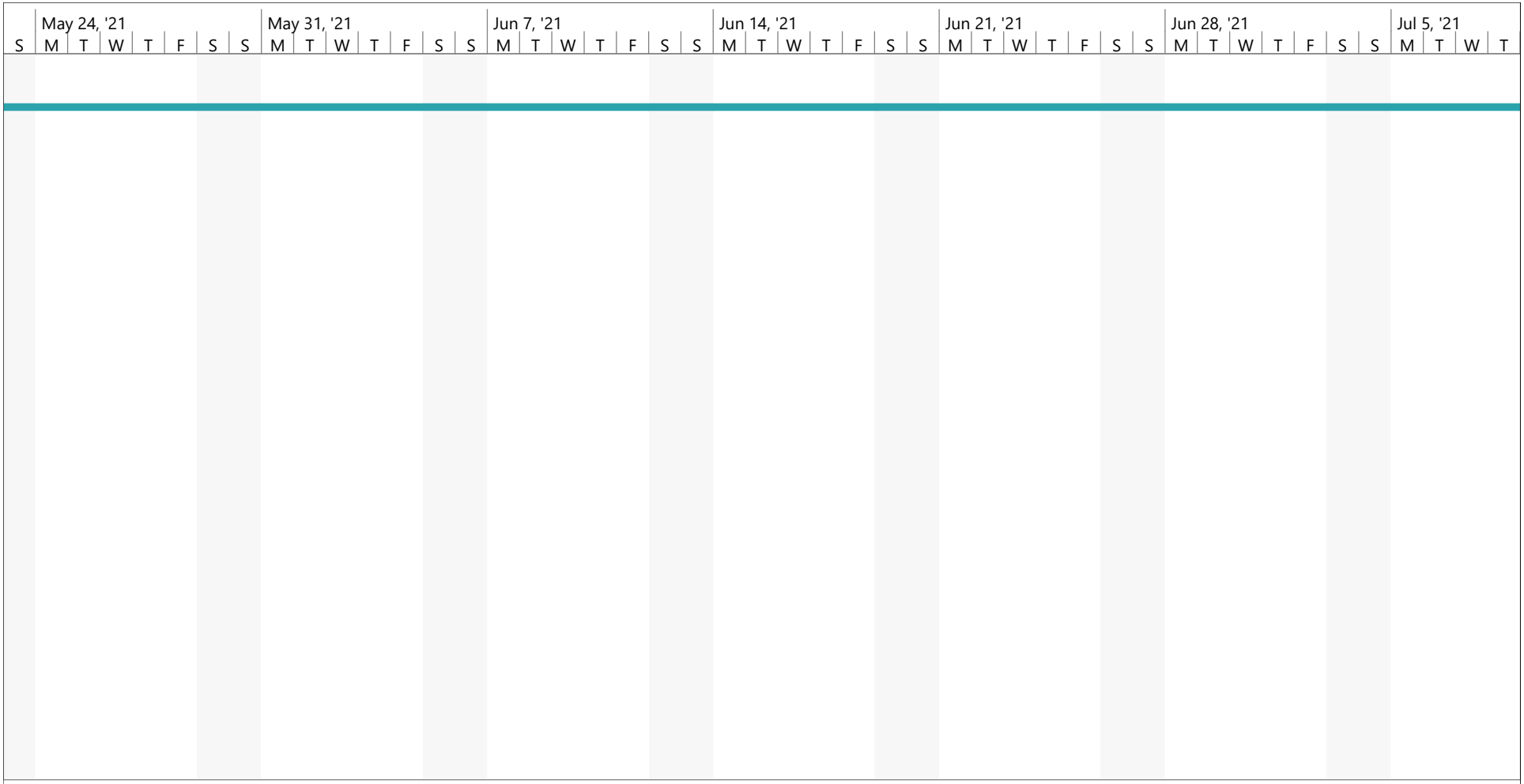

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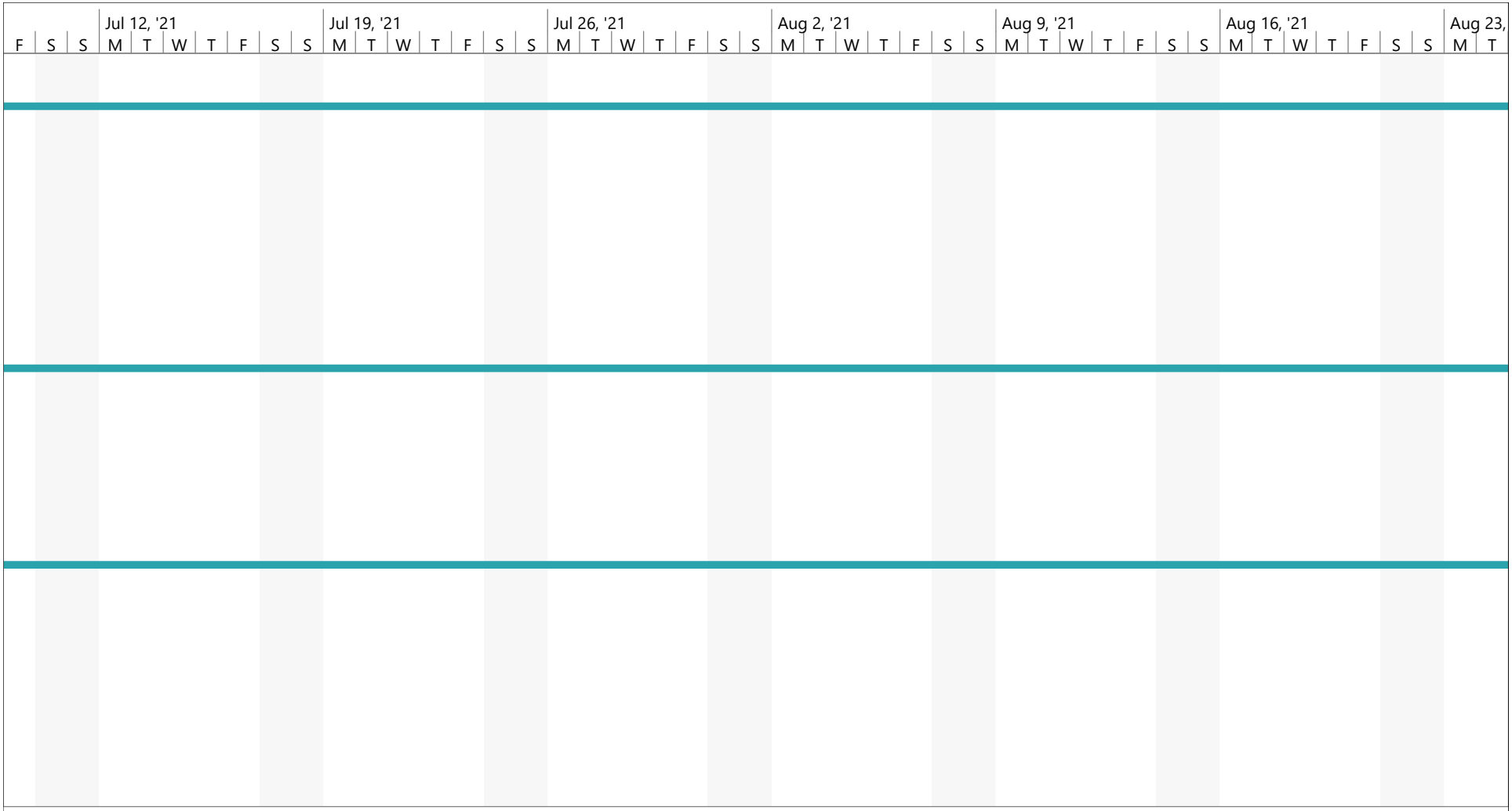

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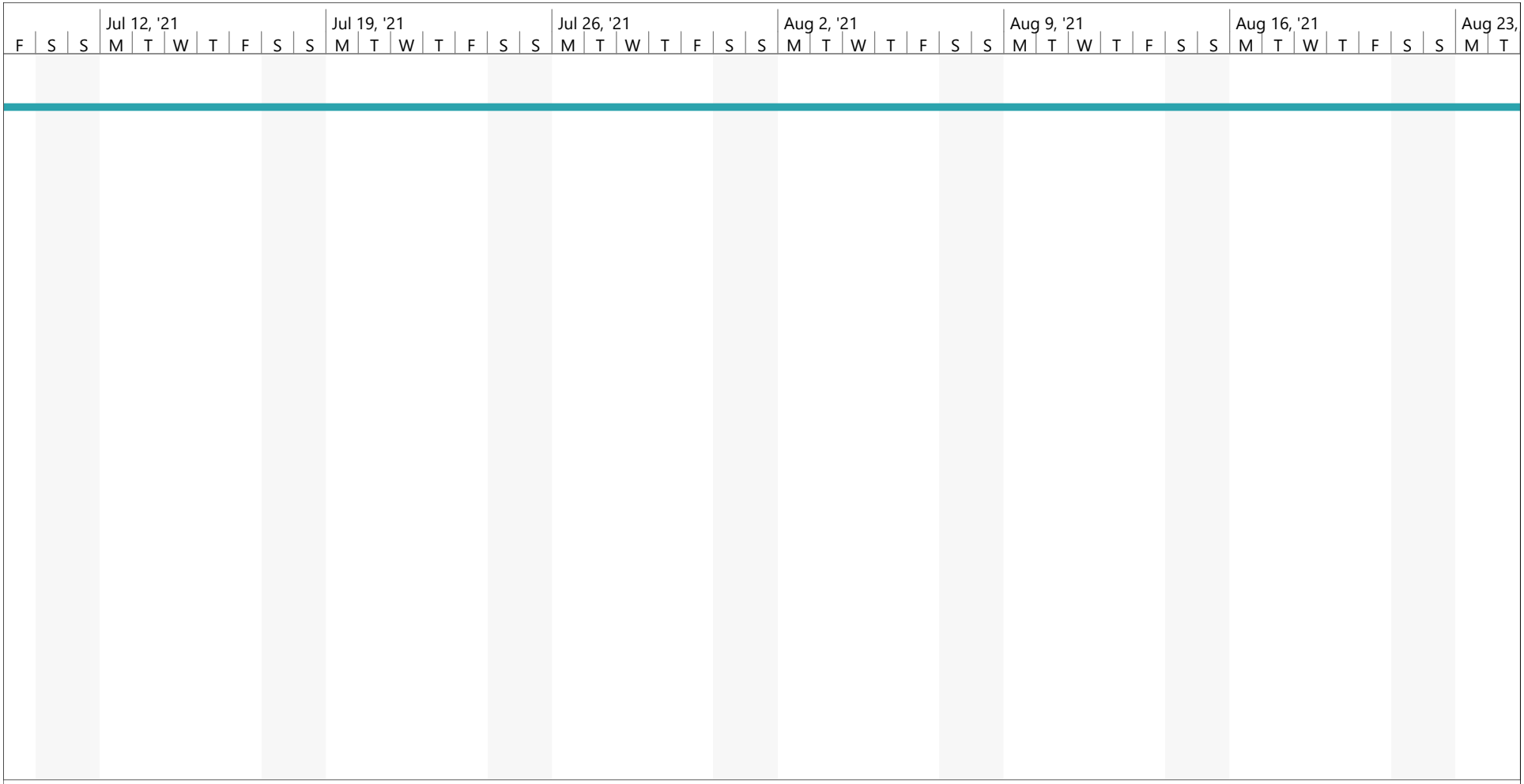

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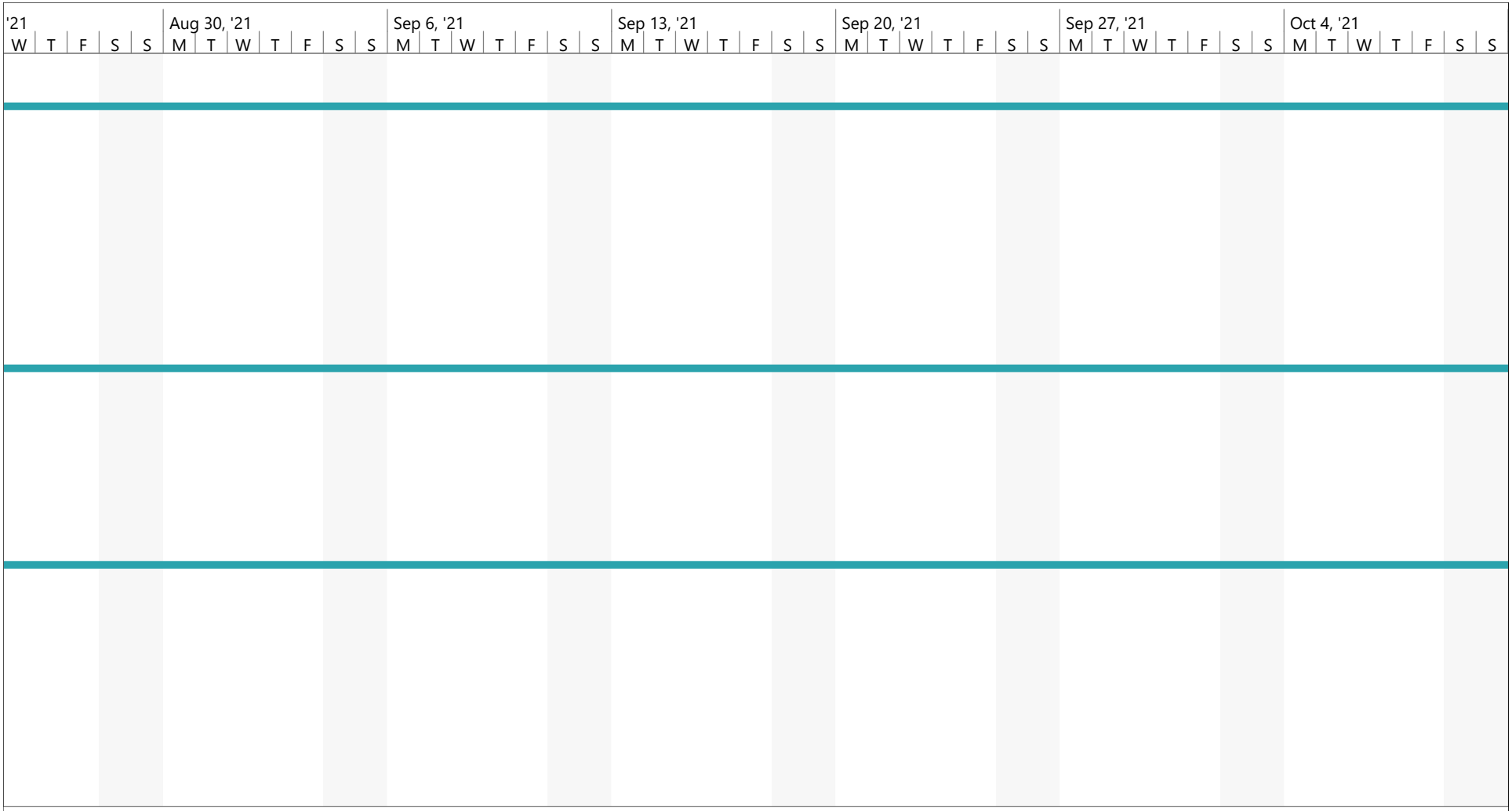

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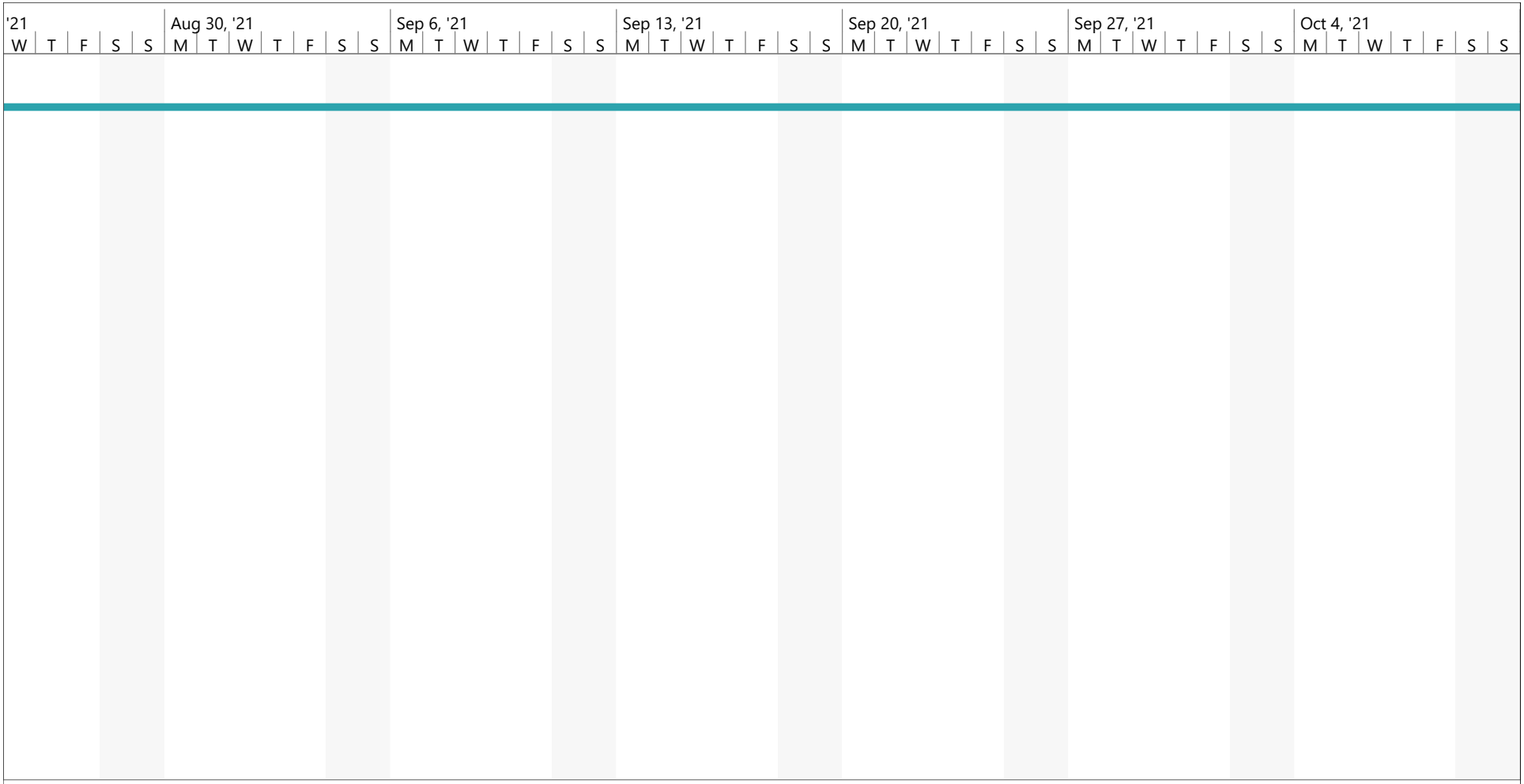

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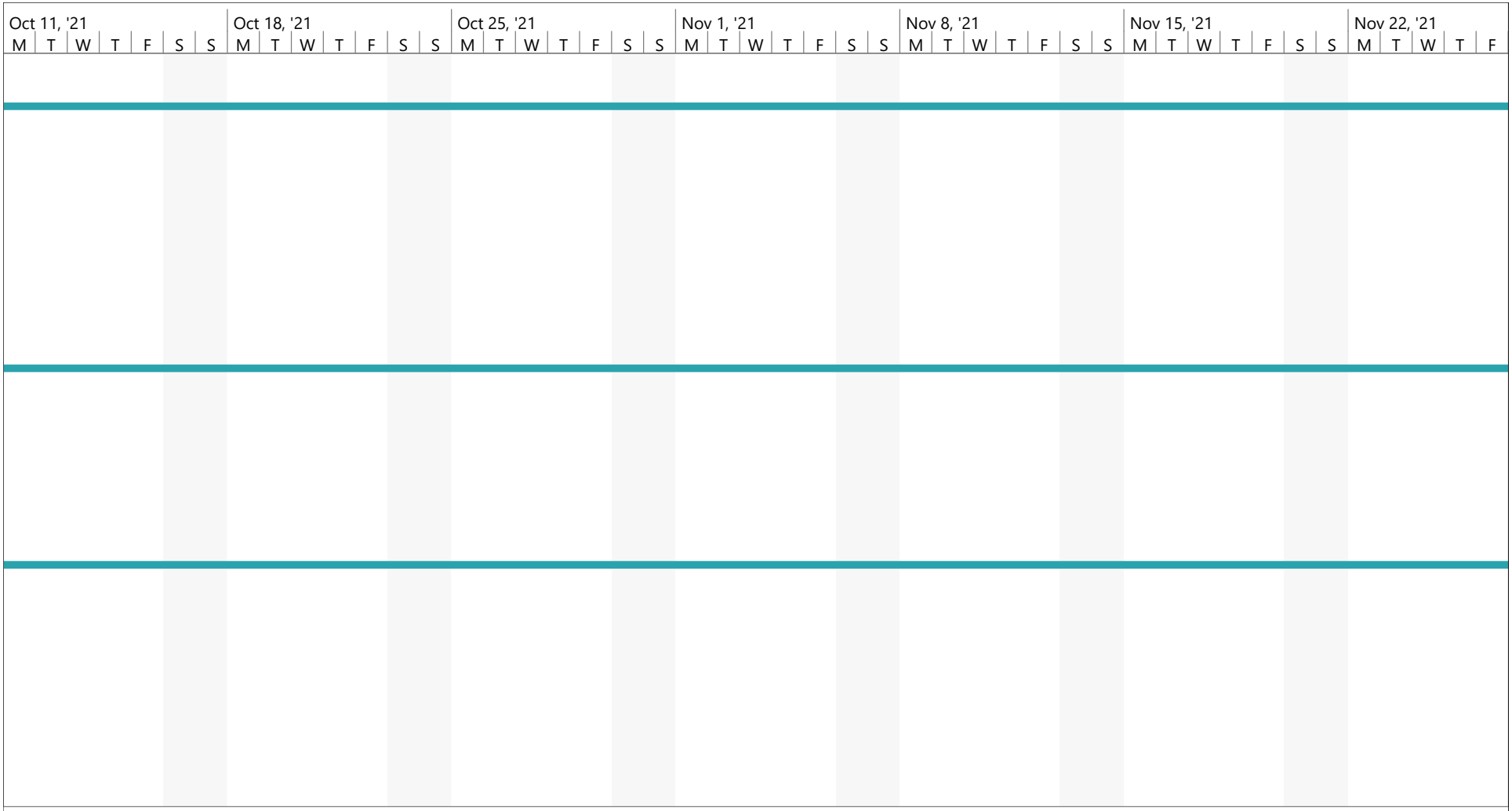

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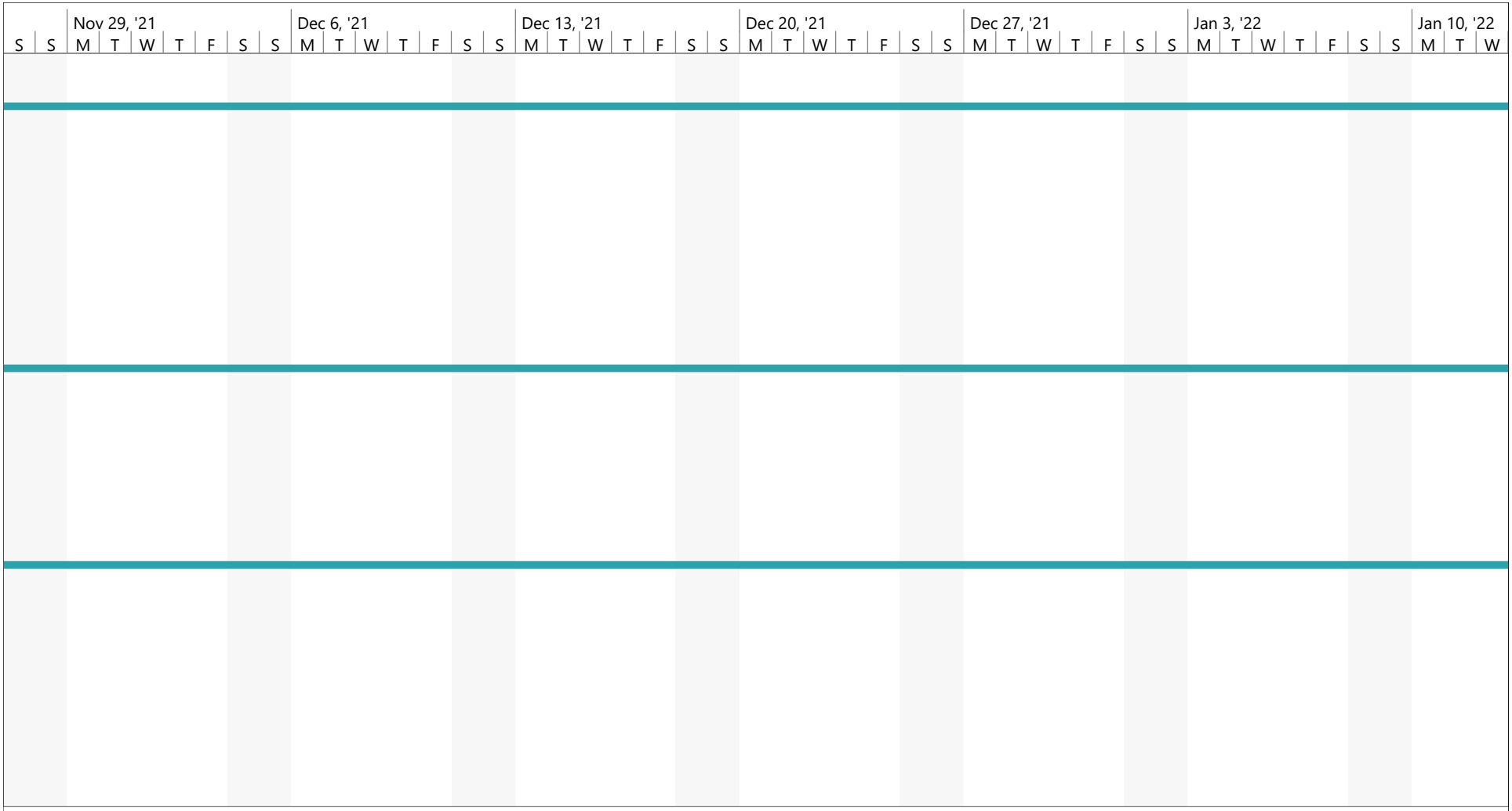

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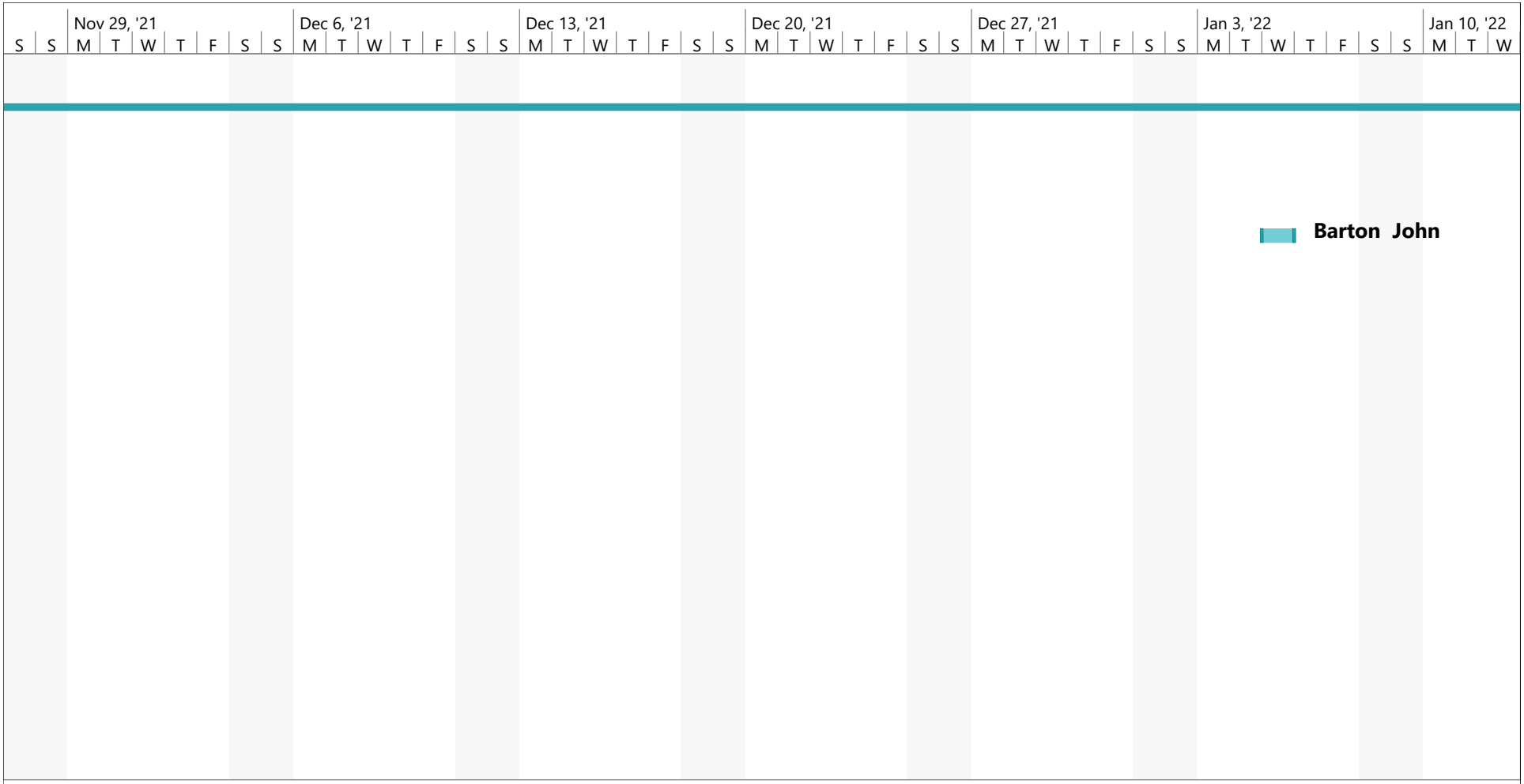

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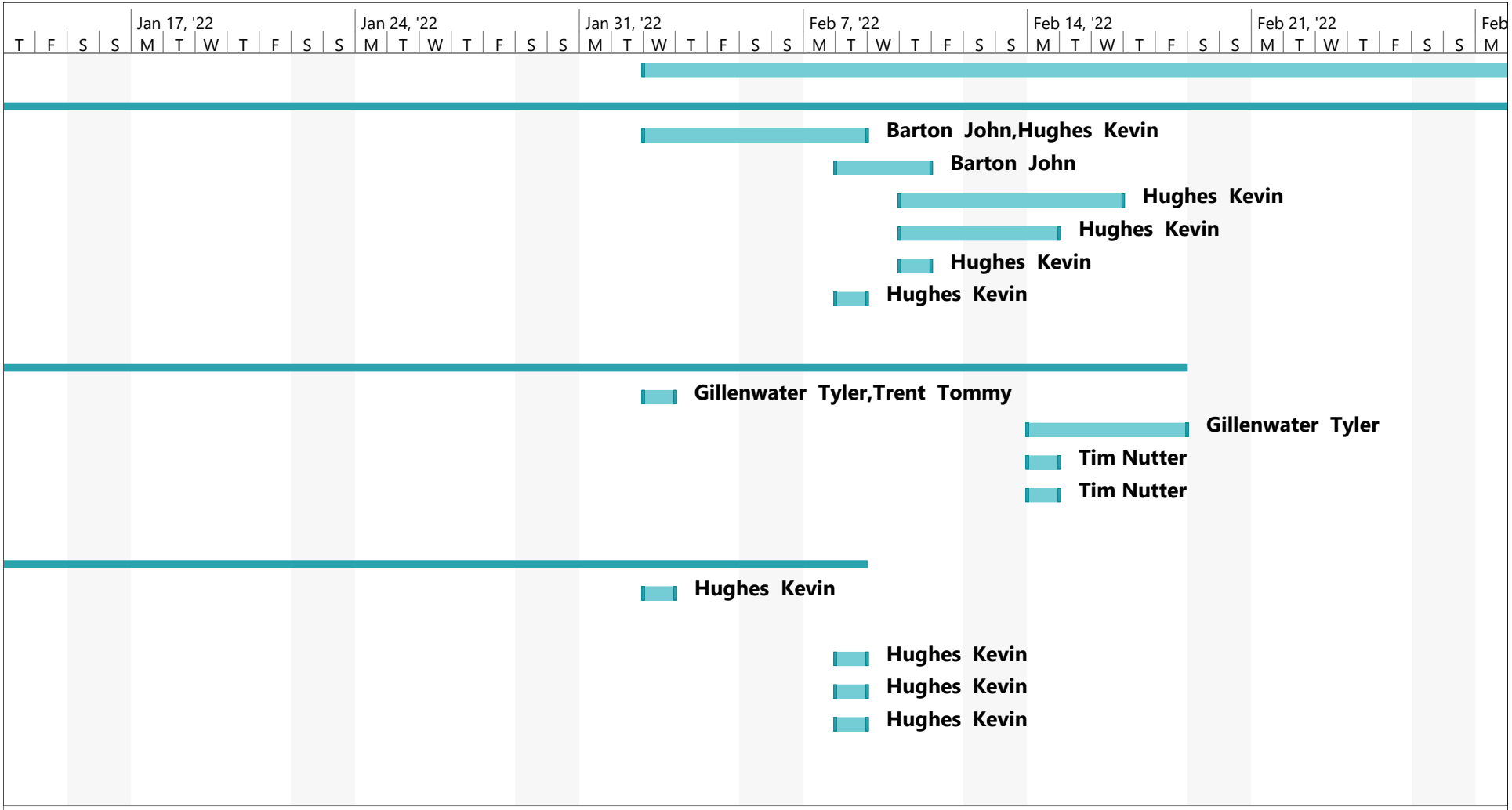

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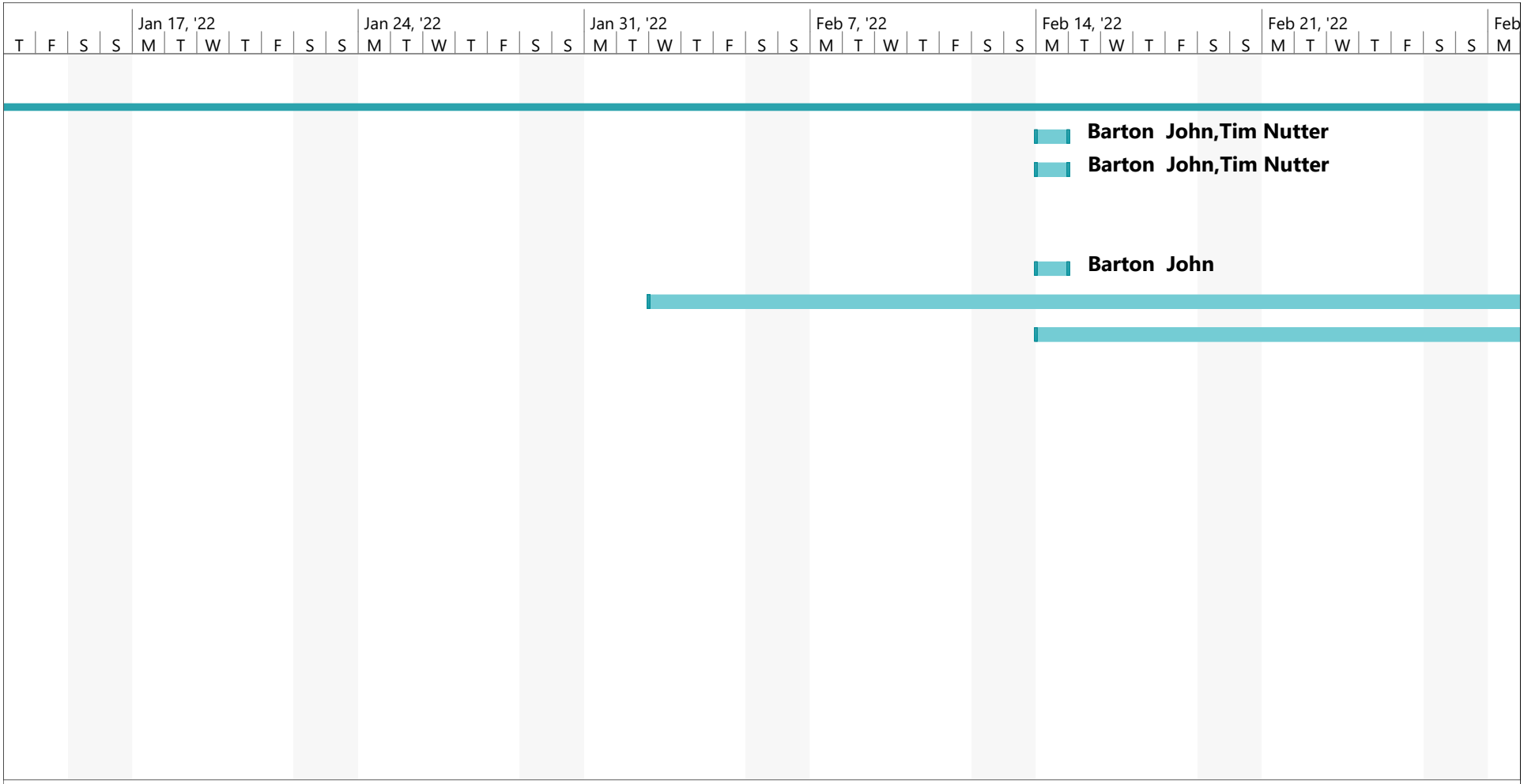

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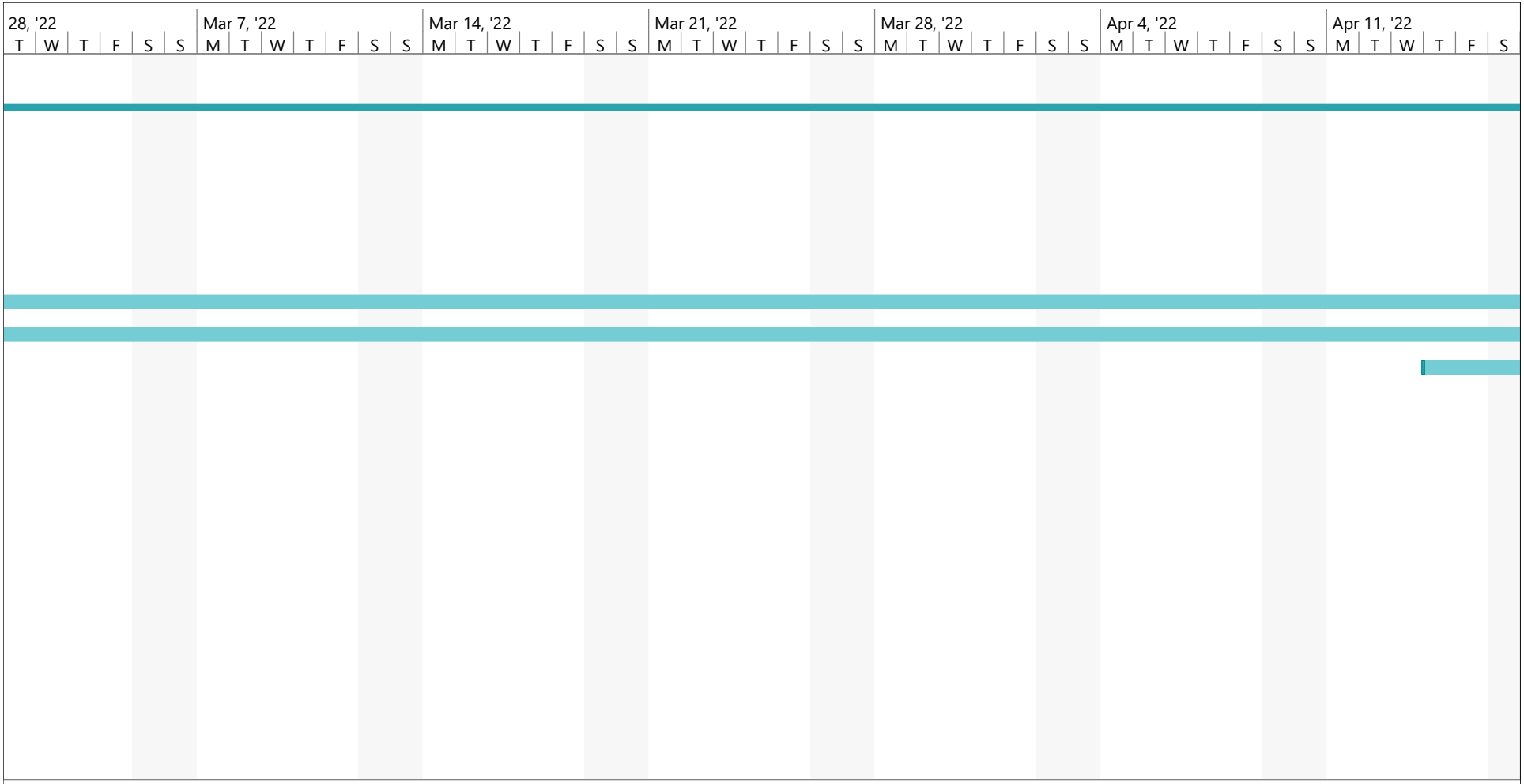

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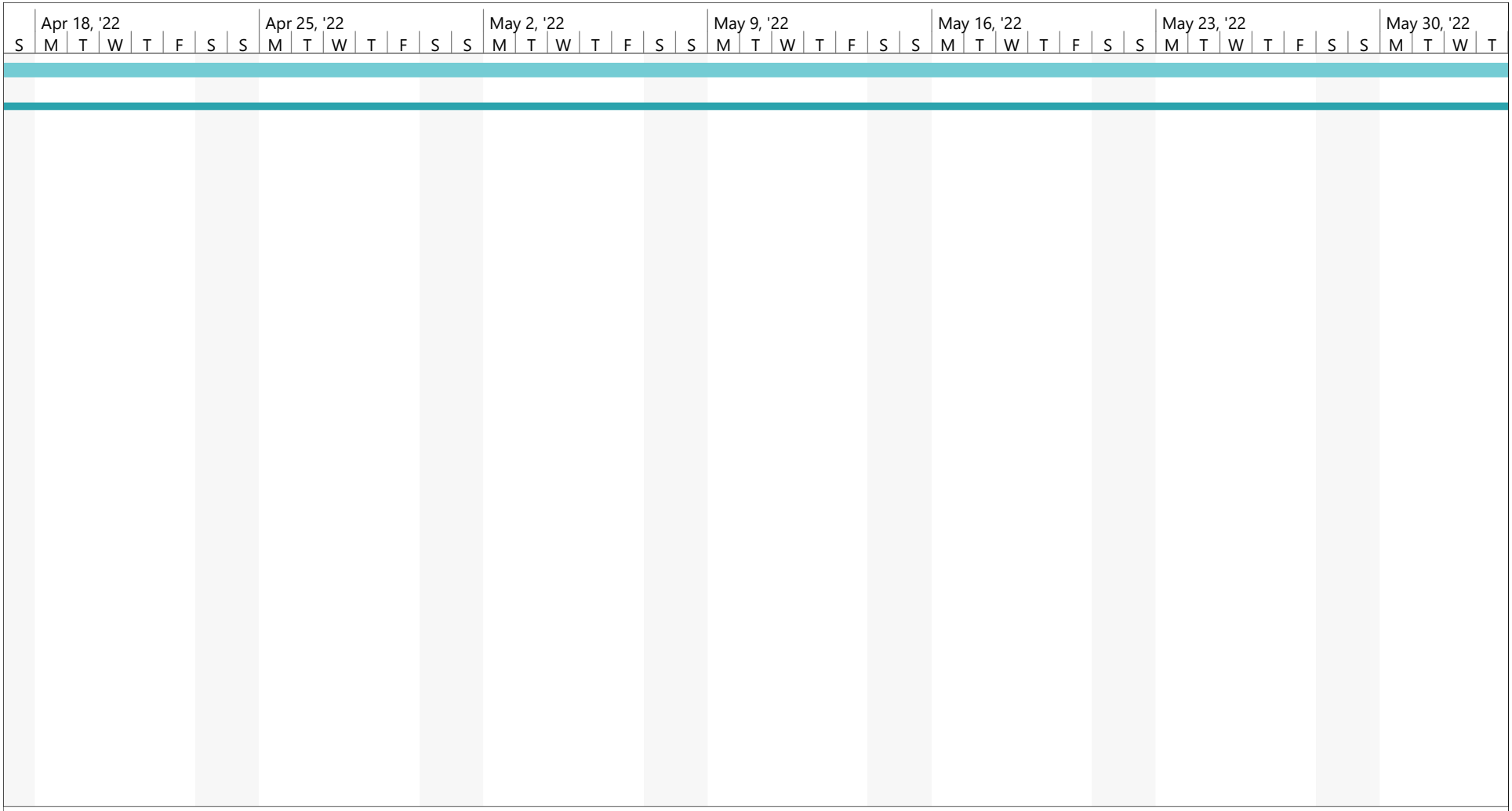

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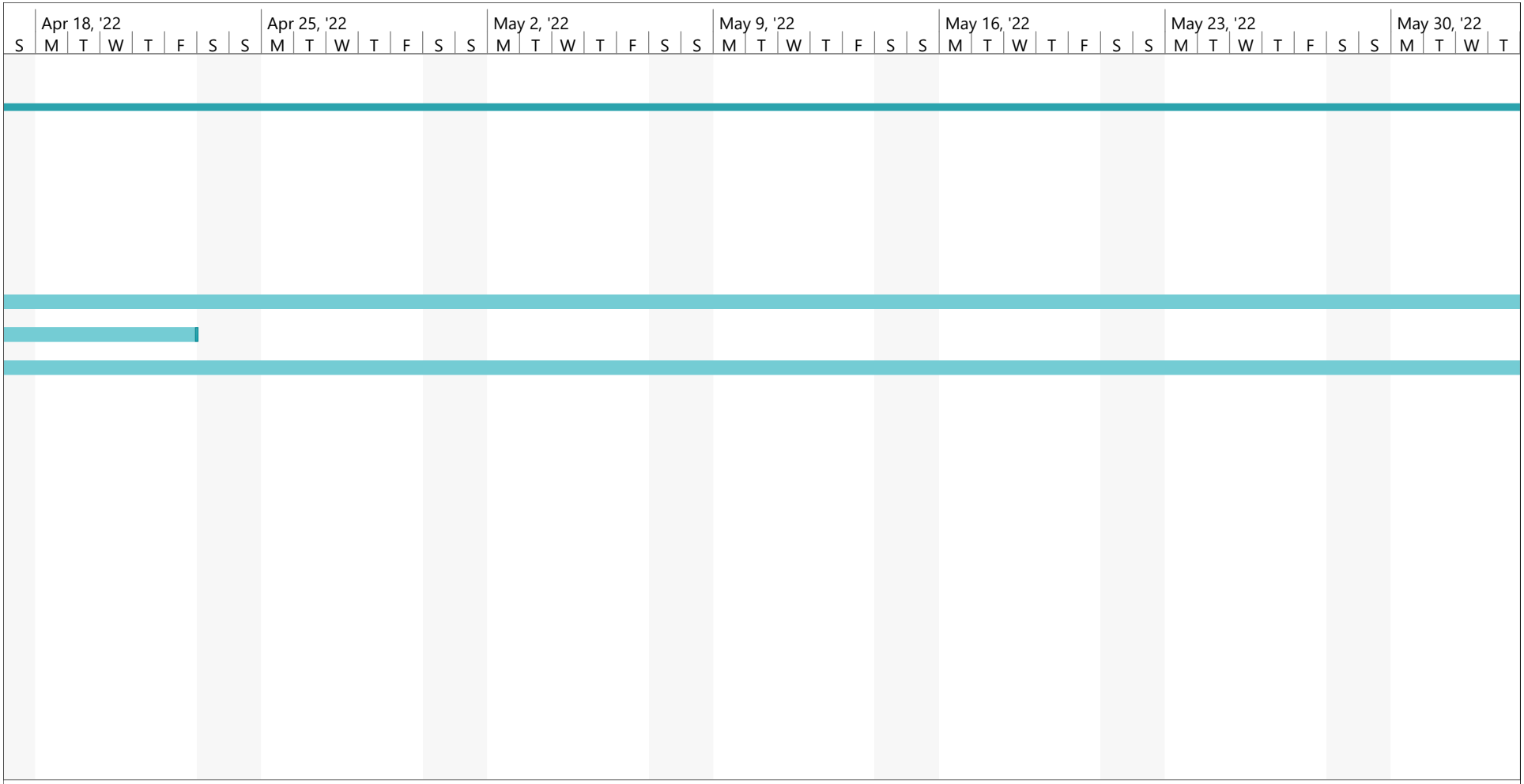

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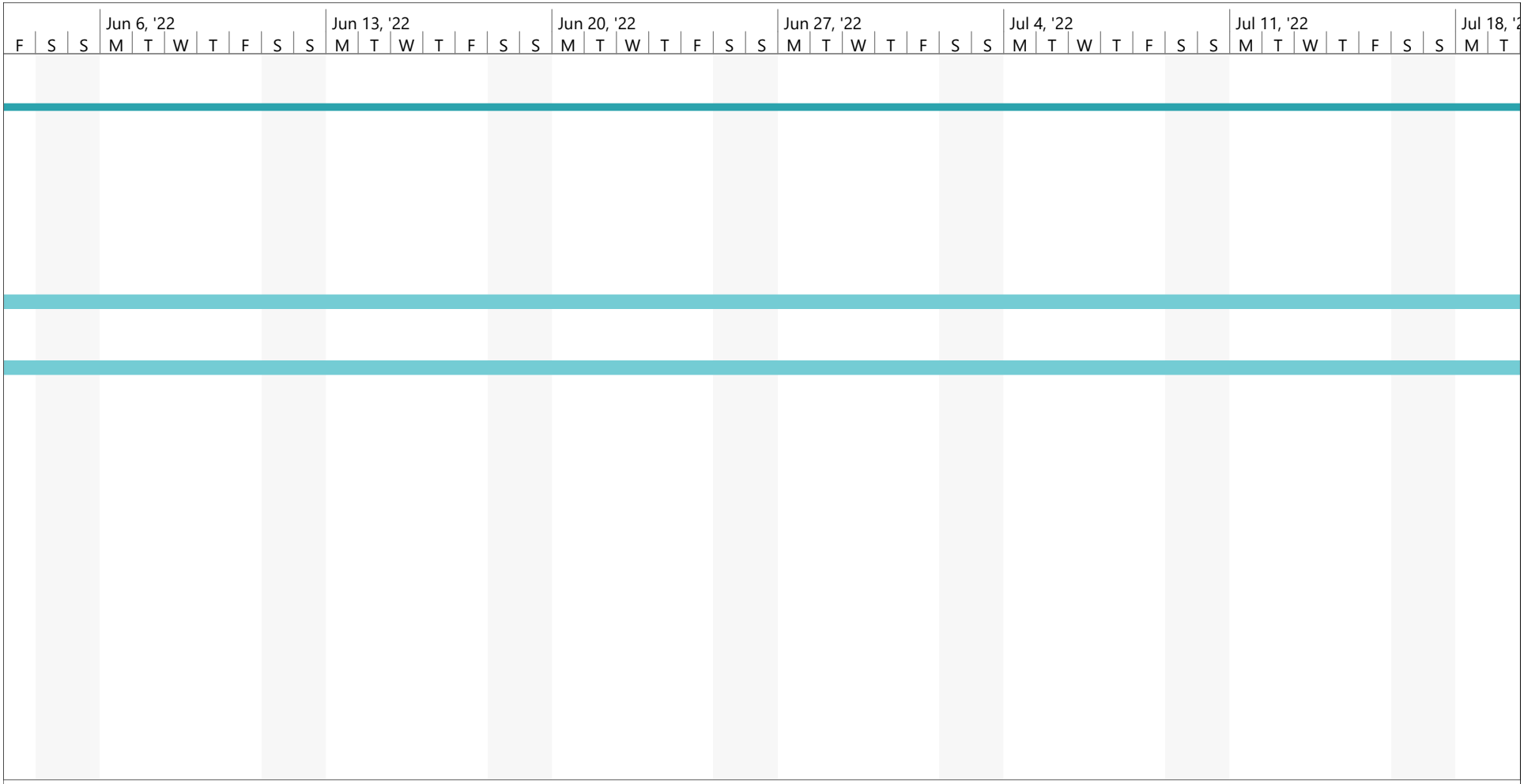

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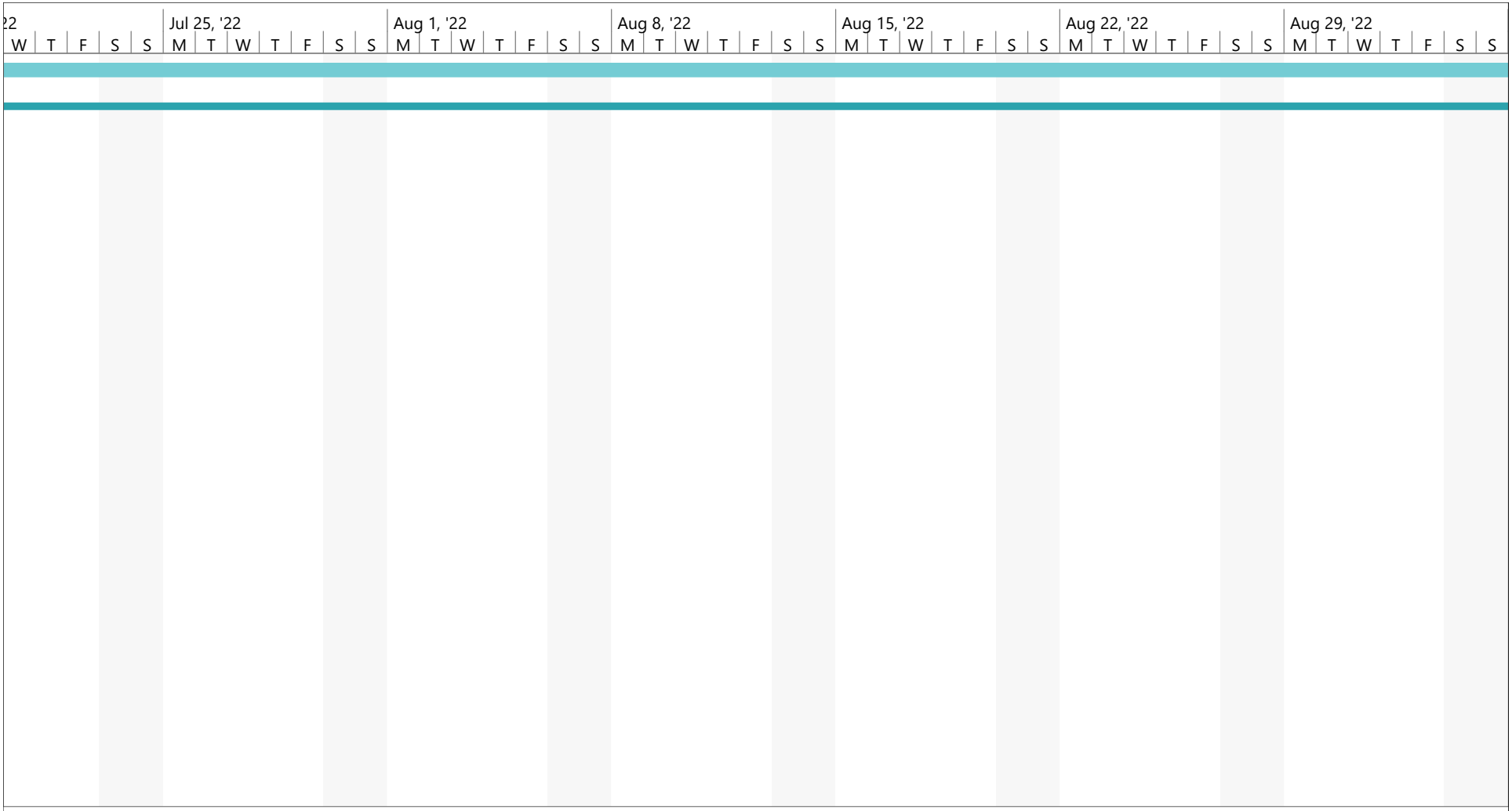

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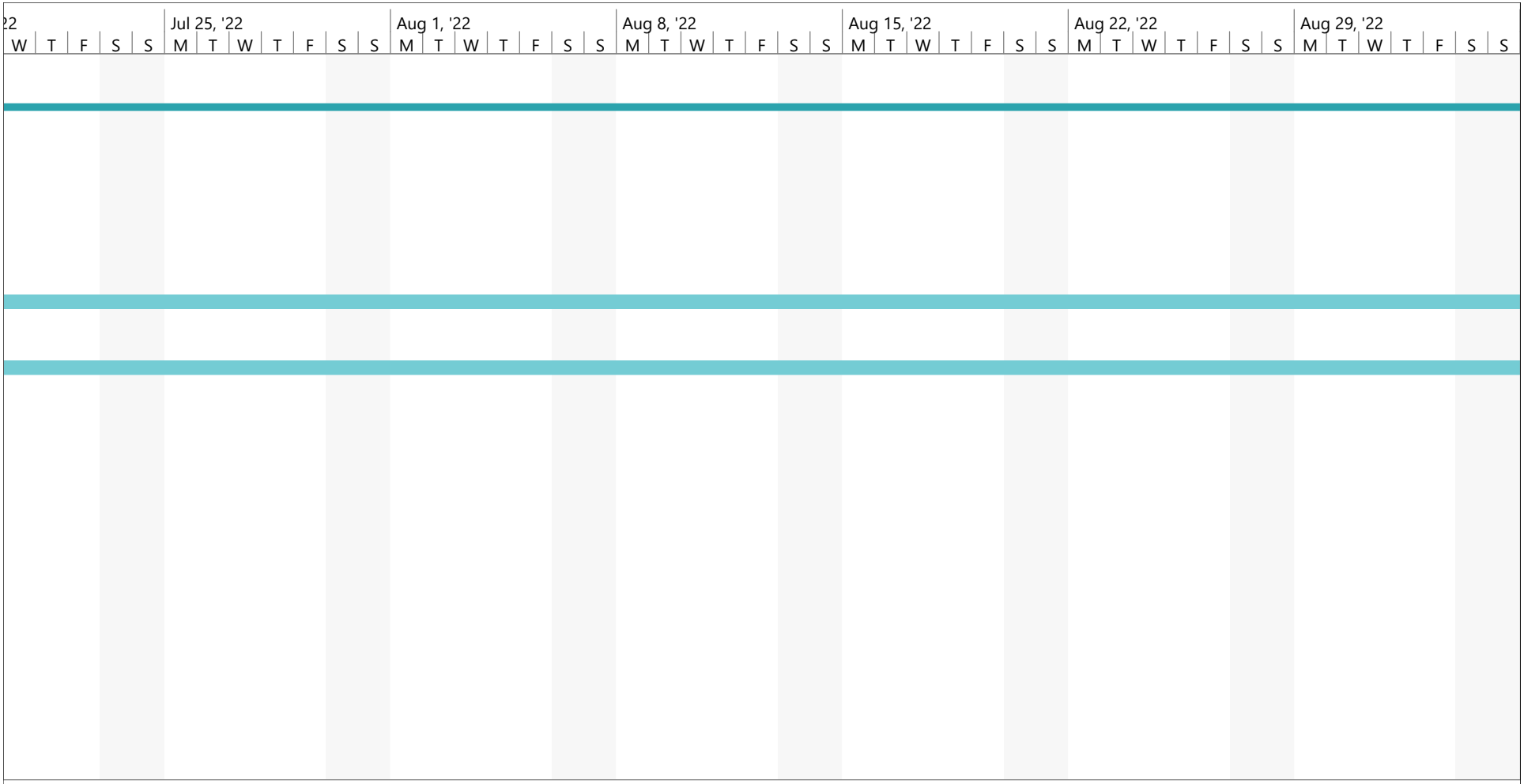

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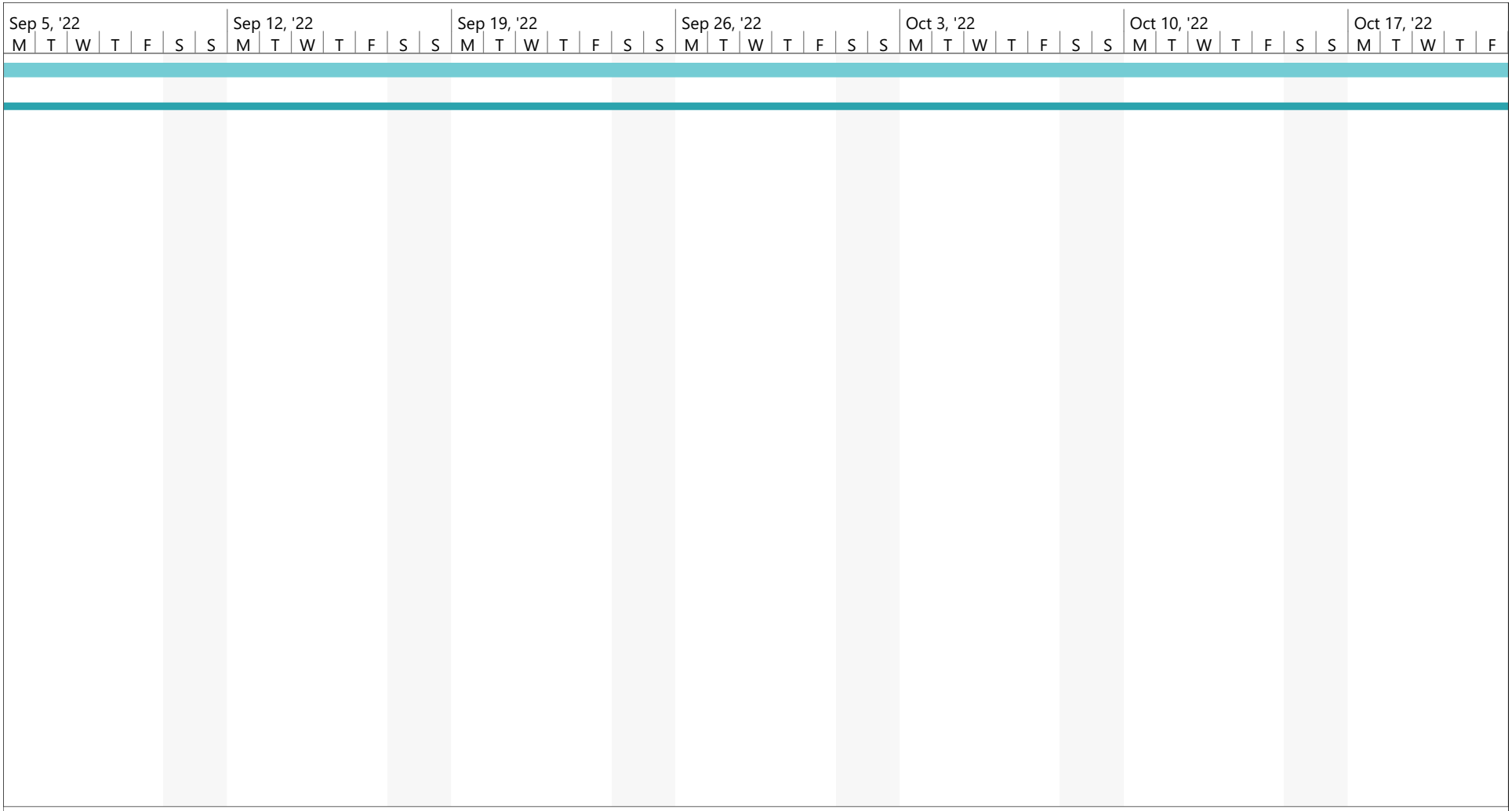

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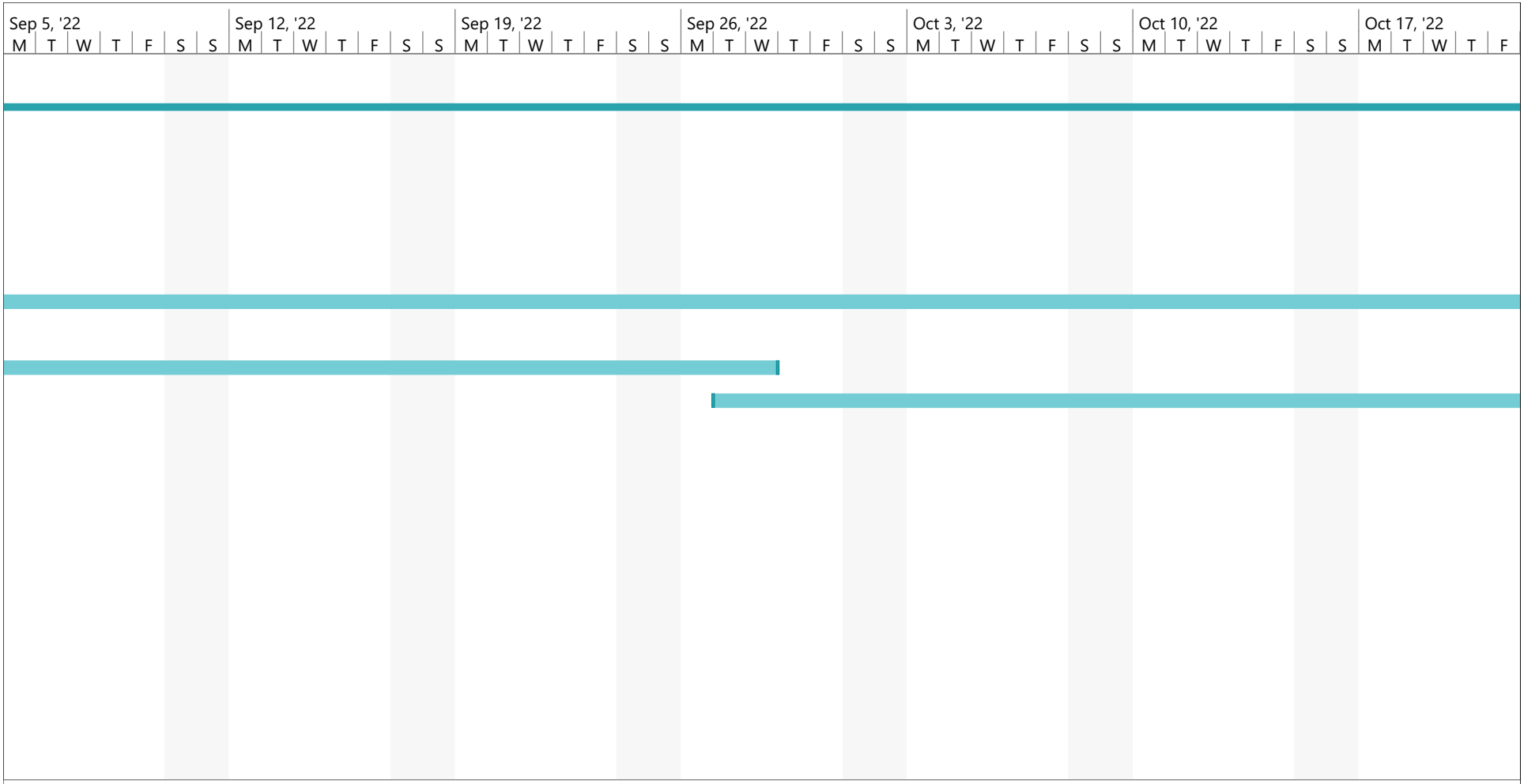

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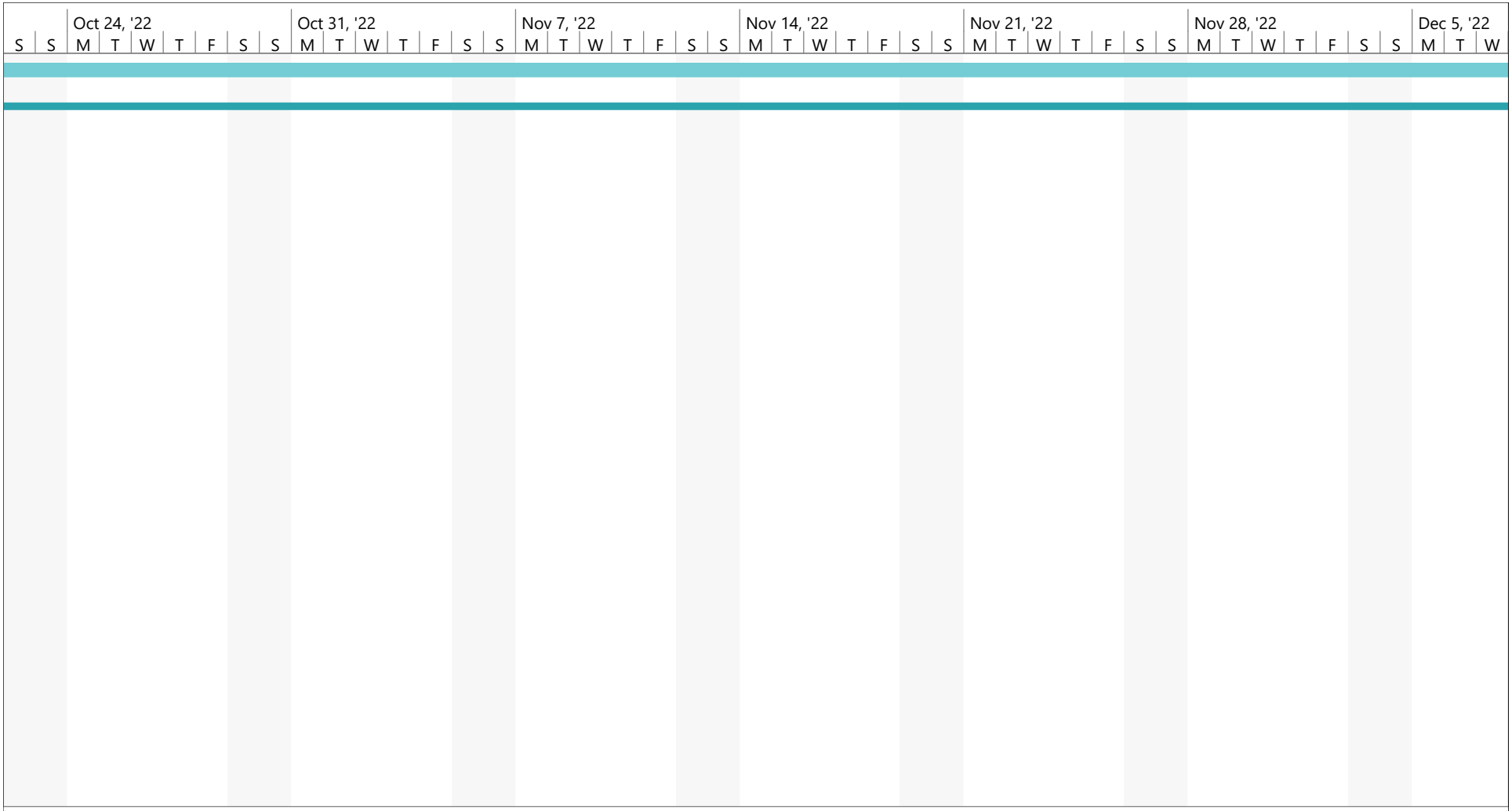

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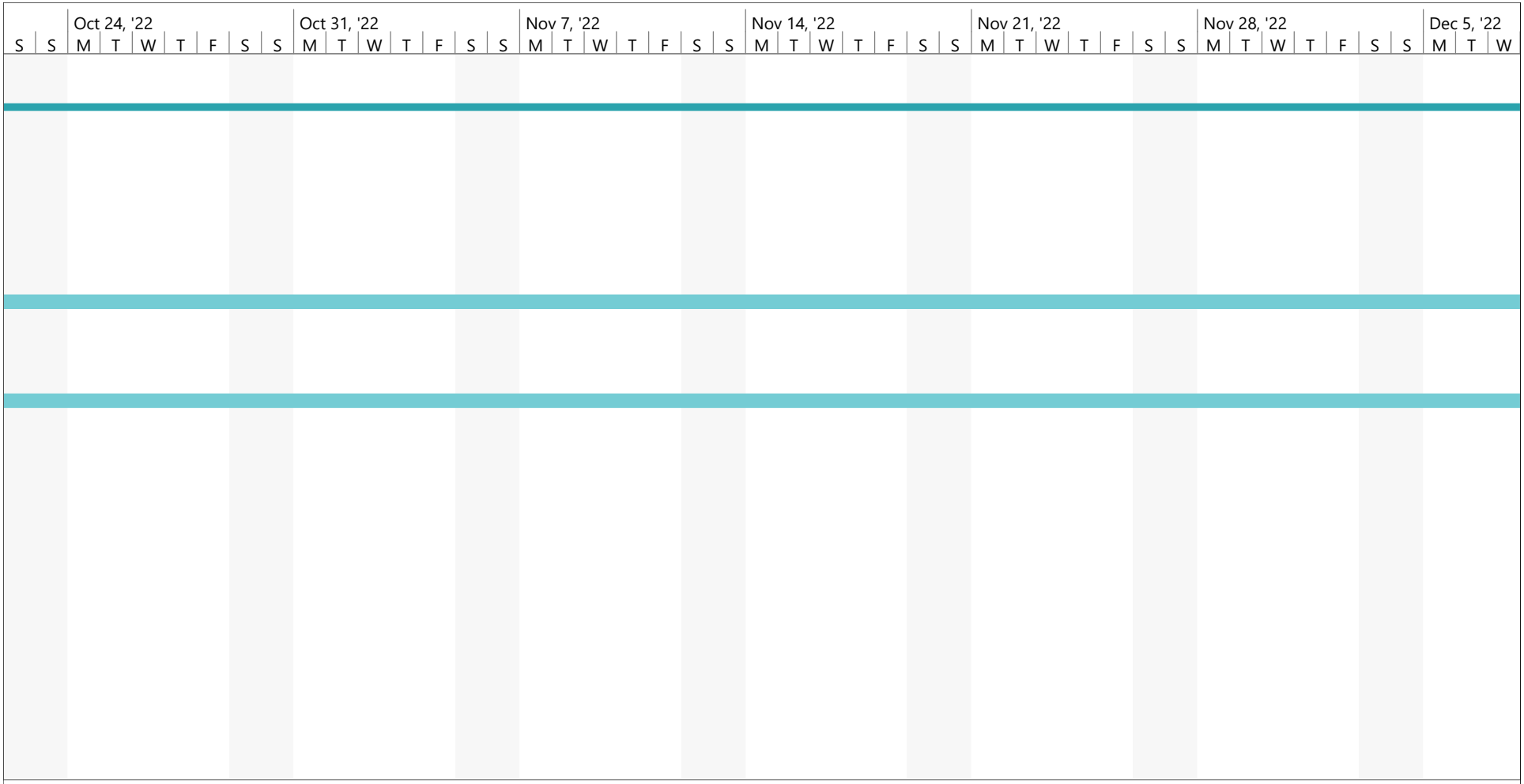

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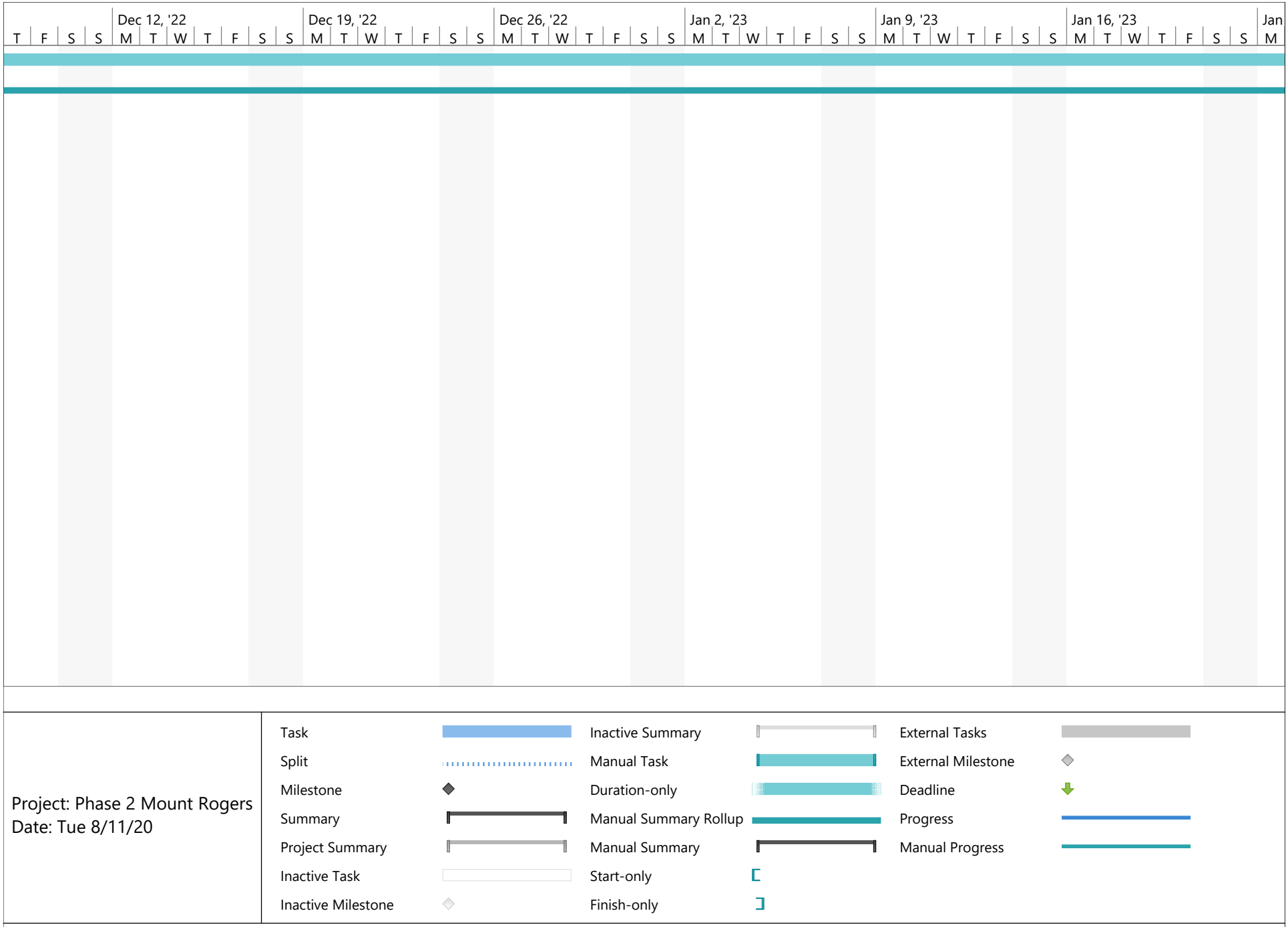

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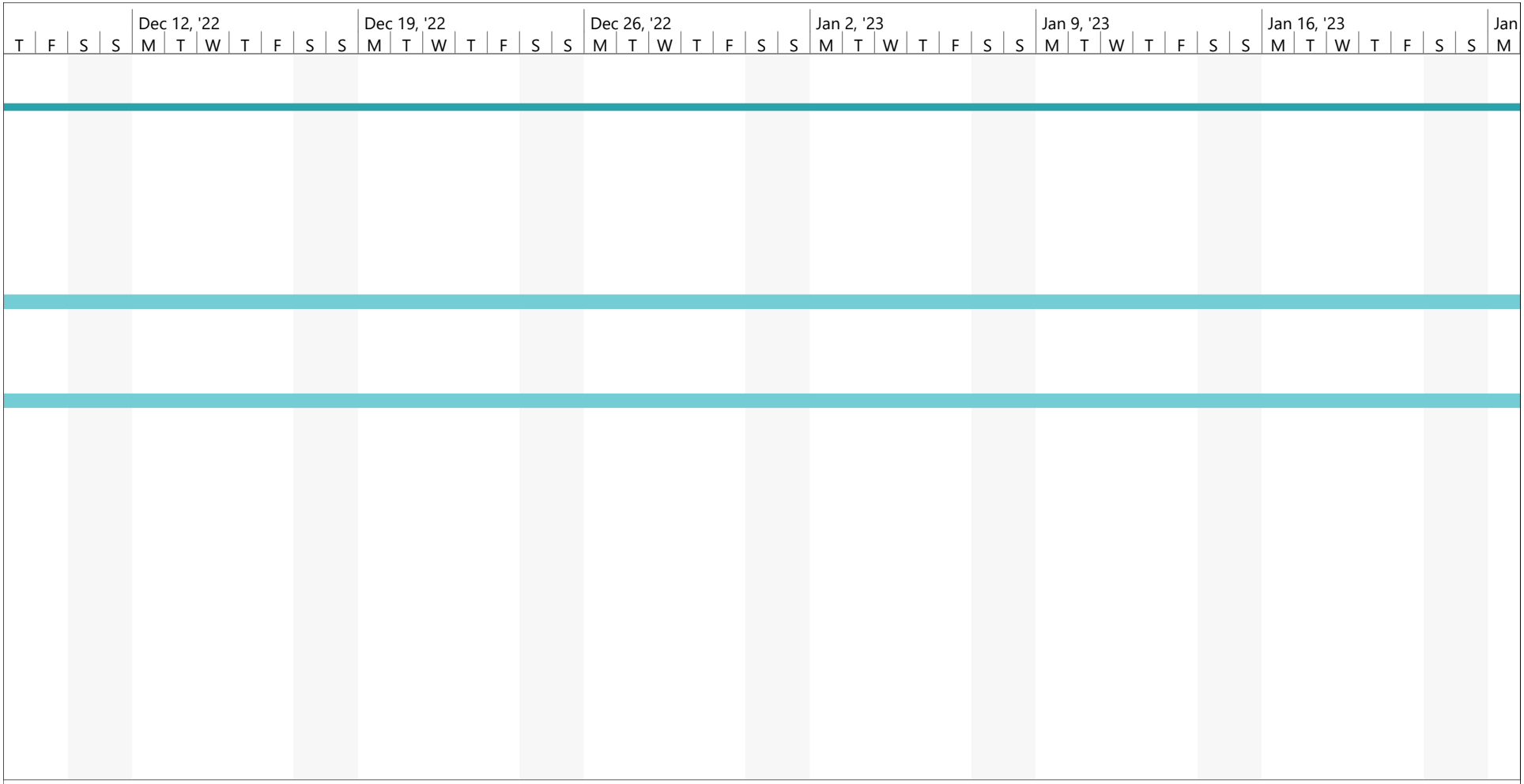

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Milestone		Duration-only		Deadline	
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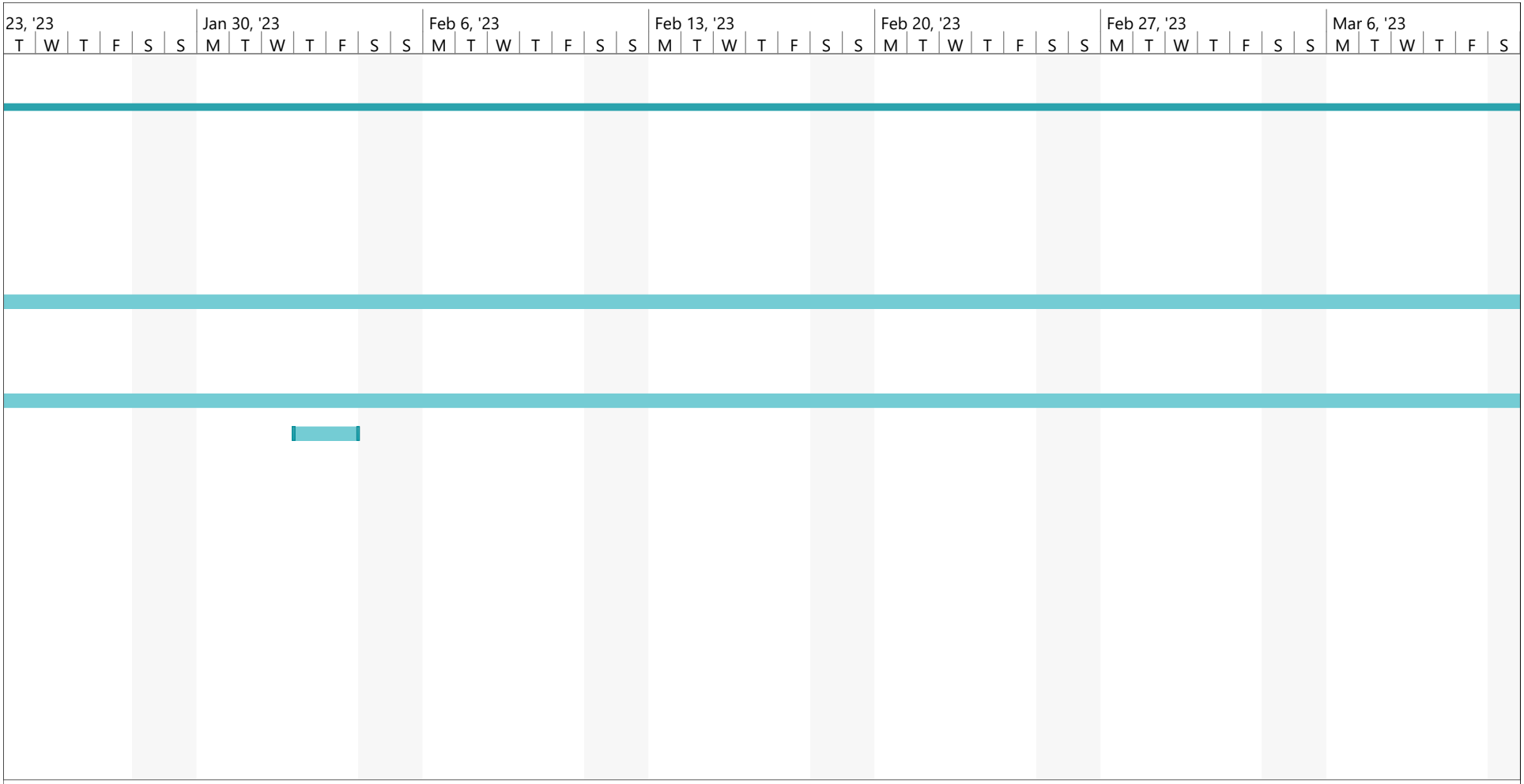
Project Summary		Manual Summary		Manual Progress	
Inactive Task		Start-only			
Inactive Milestone		Finish-only			



Project: Phase 2 Mount Rogers
Date: Tue 8/11/20

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
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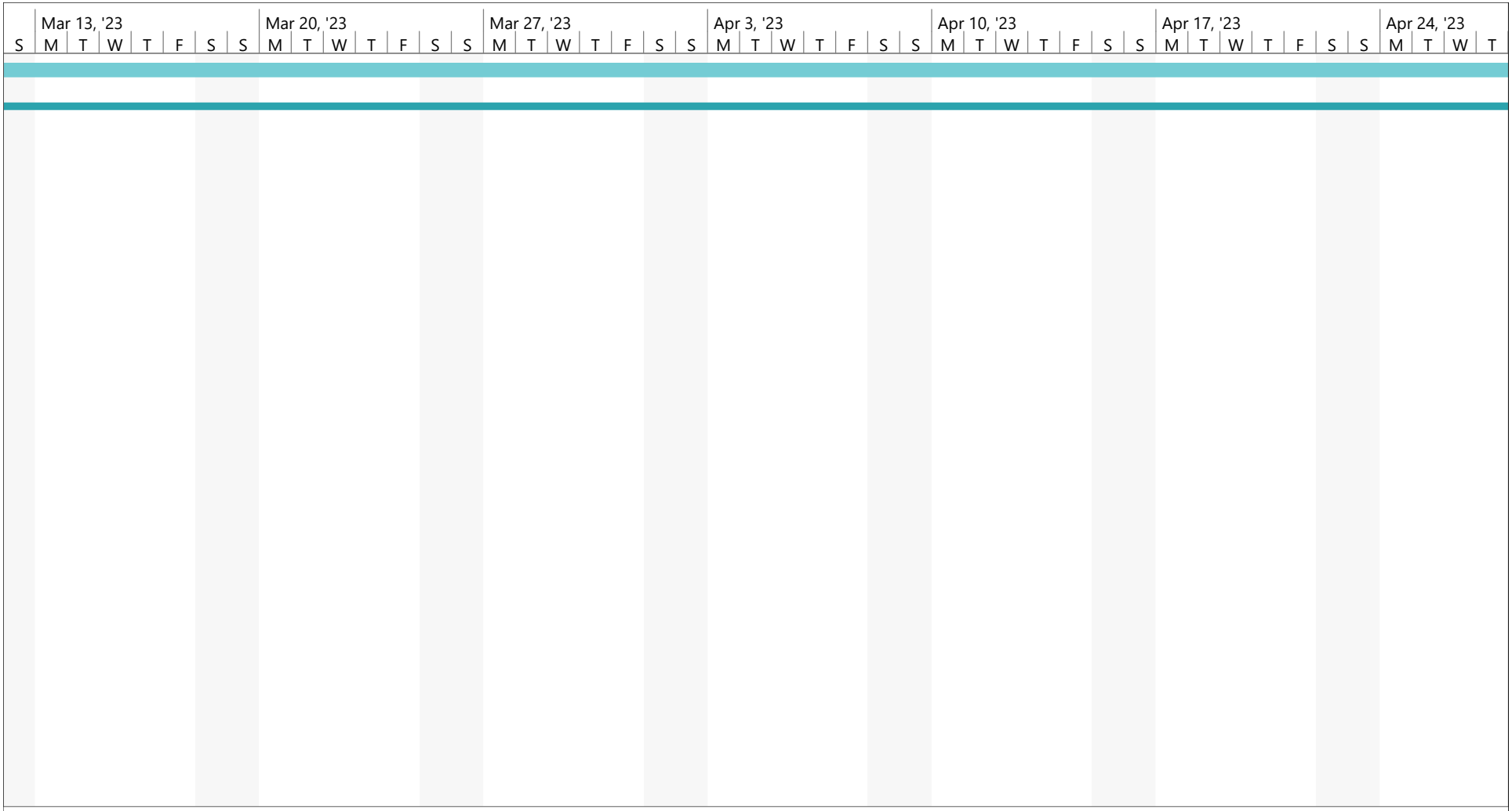

Project: Phase 2 Mount Rogers
Date: Tue 8/11/20

Task		Inactive Summary		External Tasks	
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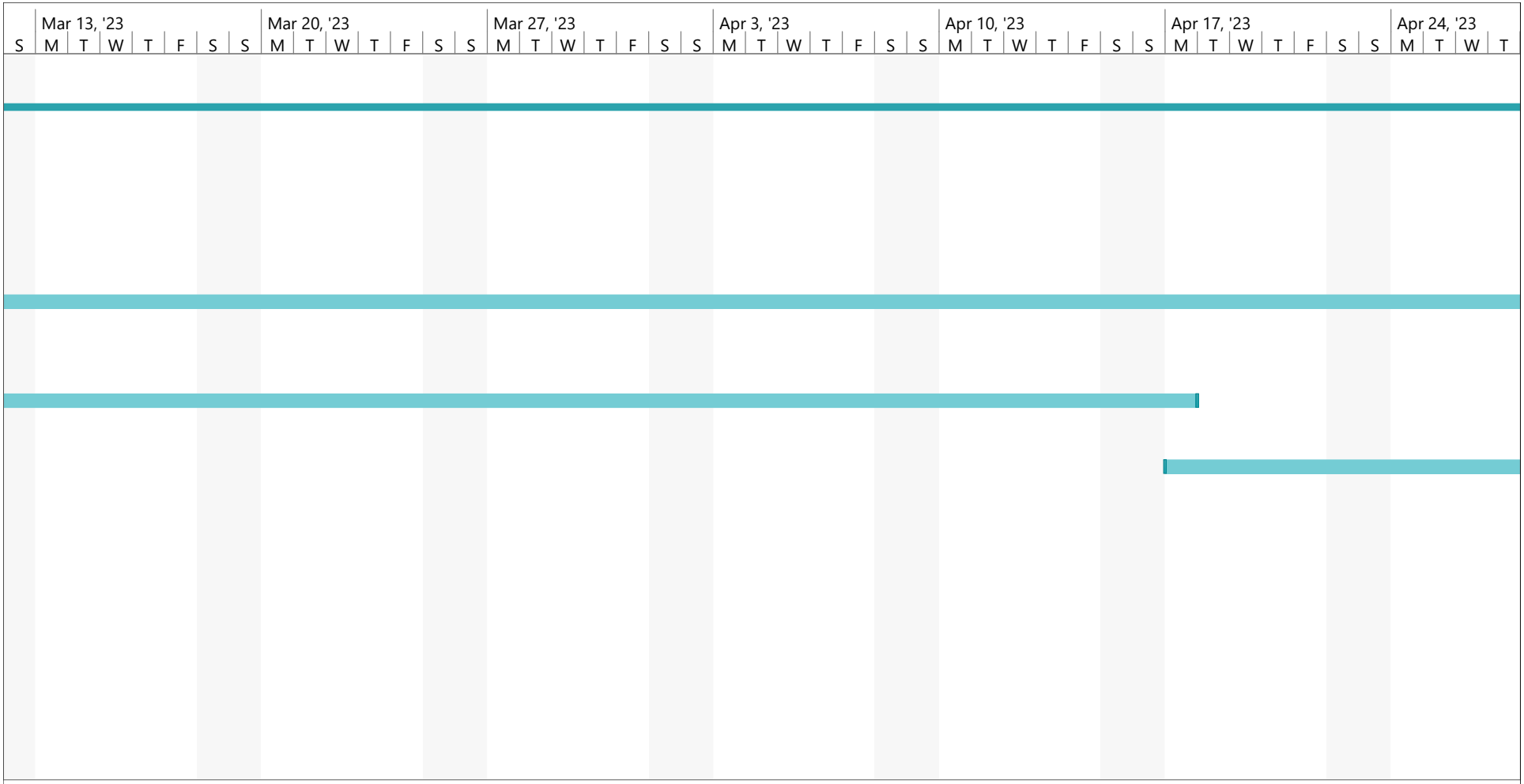

Project: Phase 2 Mount Rogers
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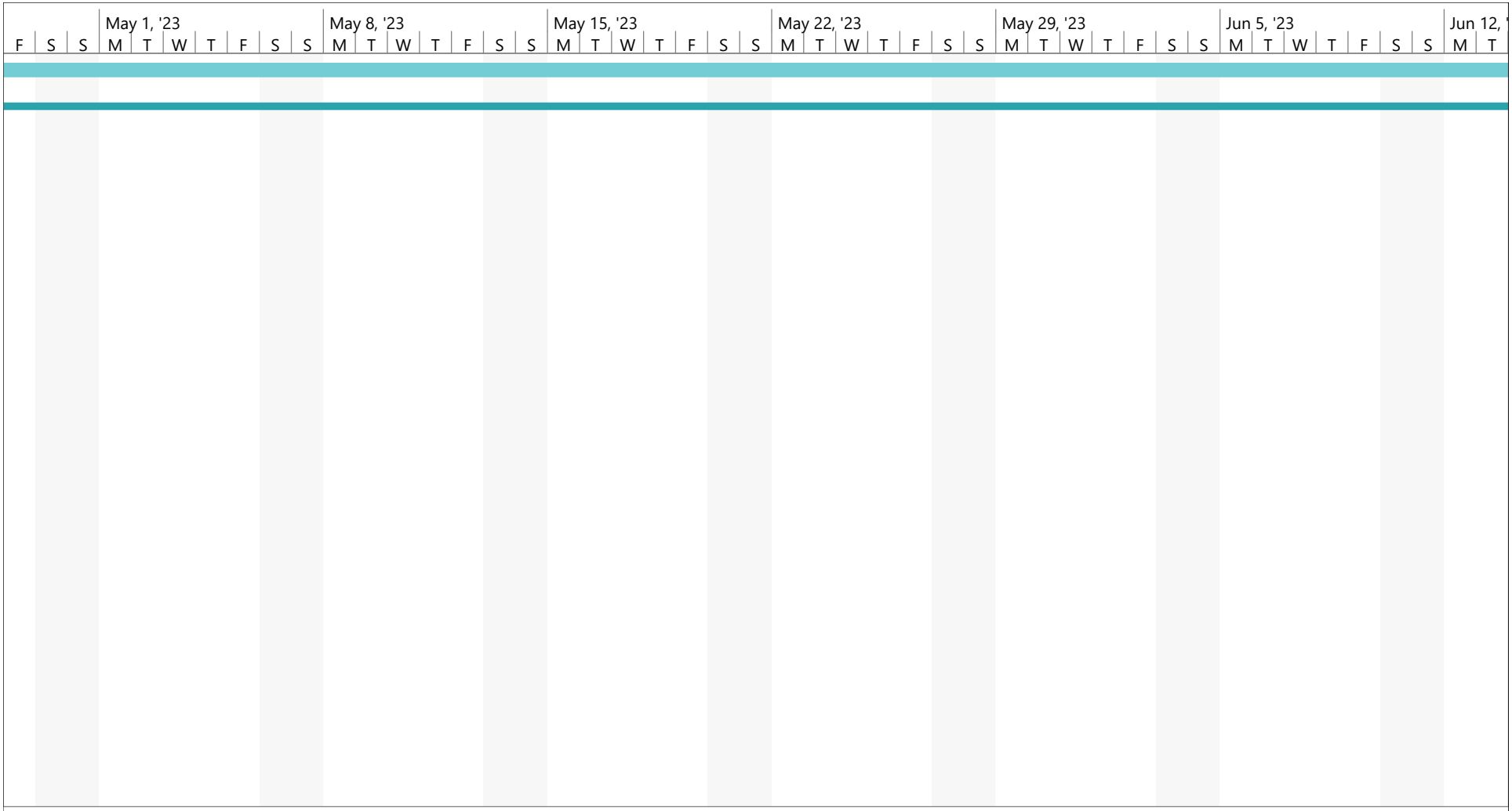

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Split		Manual Task		External Milestone	
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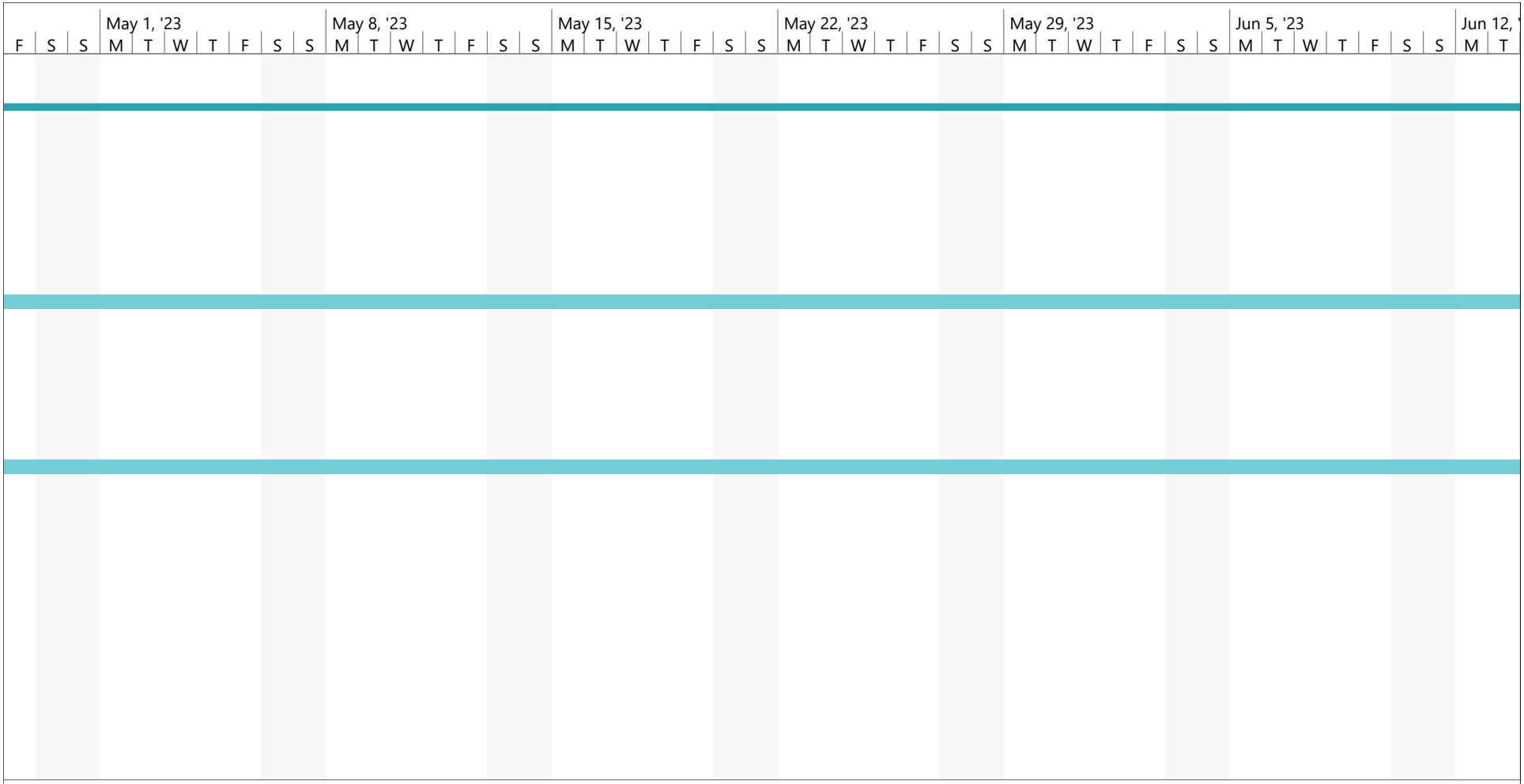

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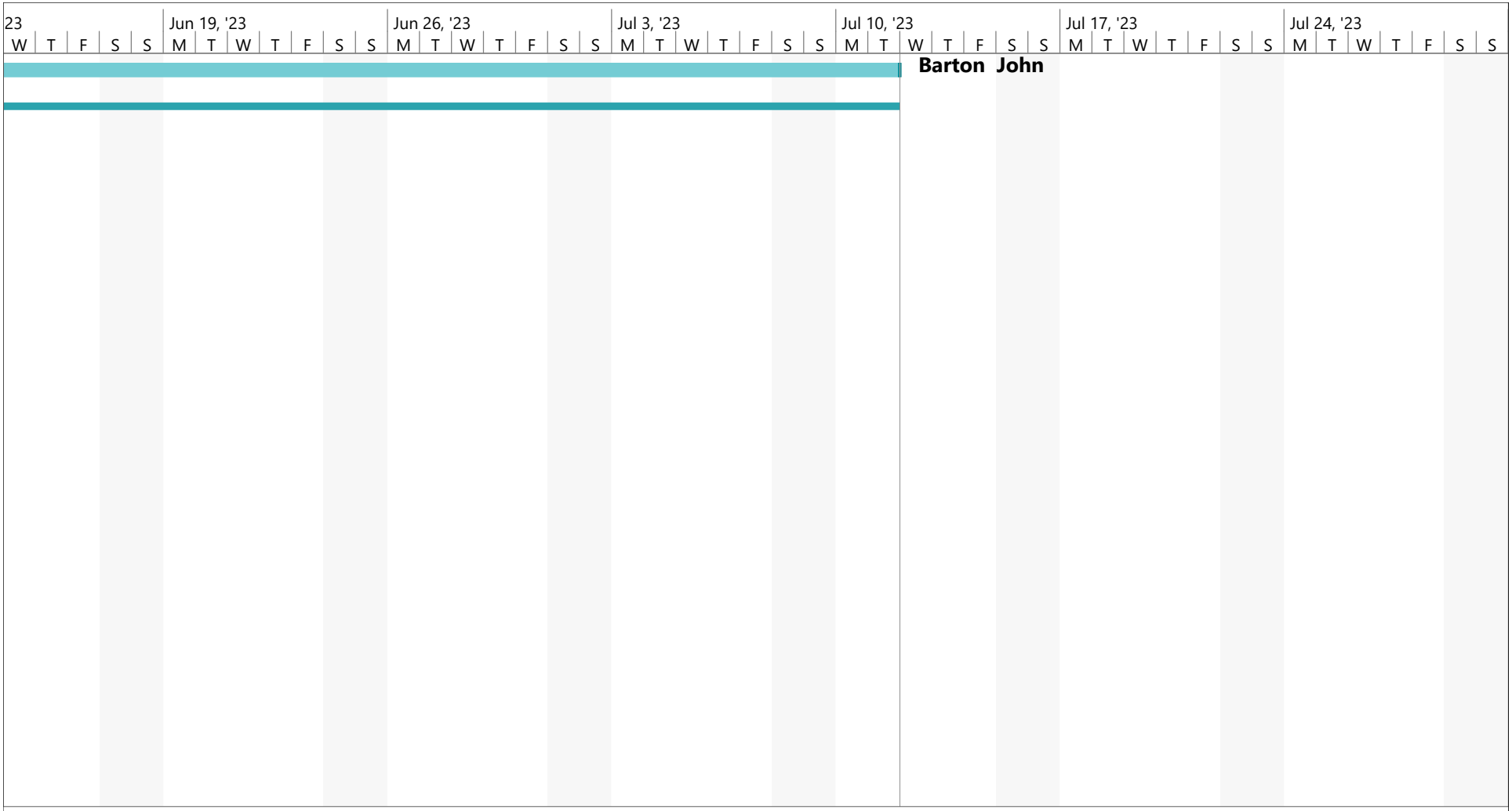

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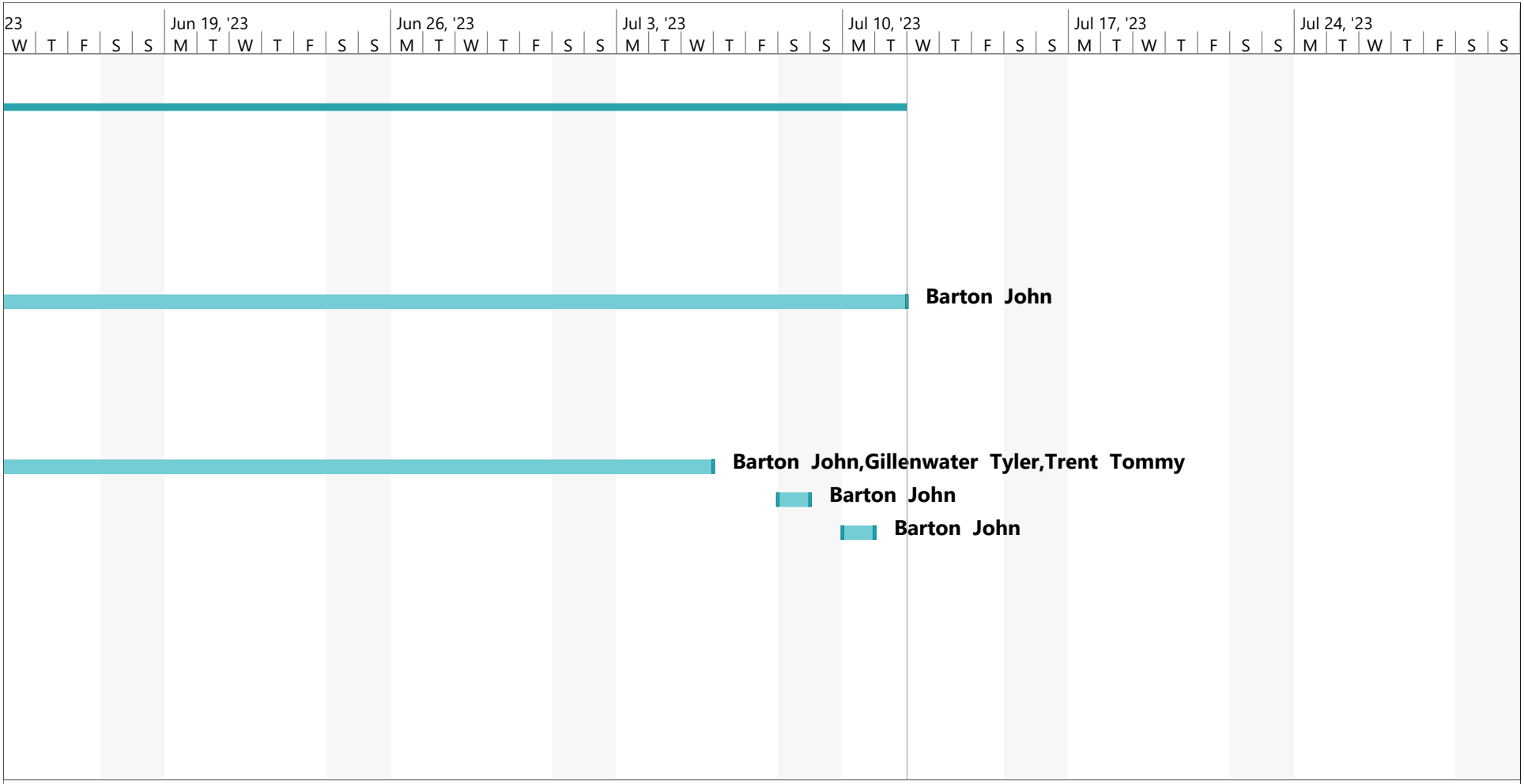

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Inactive Task		Start-only			
Inactive Milestone		Finish-only			

ID	Task Mode	Task Name	Duration	Start	Finish
1		Phase 3 Mount Rogers	180 days	Wed 2/2/22	Tue 10/11/22
2		**Field Engineering**			
3		Field Data Collection	5 days	Wed 2/2/22	Tue 2/8/22
4		Site Survey	3 days	Tue 2/8/22	Thu 2/10/22
5		Premitting Applications	5 days	Thu 2/10/22	Wed 2/16/22
6		Pole Data	3 days	Thu 2/10/22	Mon 2/14/22
7		Make Ready Summary	1 day	Thu 2/10/22	Thu 2/10/22
8		Easements Identified	1 day	Tue 2/8/22	Tue 2/8/22
9					
10		**Facilities**			
11		Splice Package	1 day	Wed 2/2/22	Wed 2/2/22
12		Rainbows BOM	5 days	Mon 2/14/22	Fri 2/18/22
13		Estimate Workbook	1 day	Mon 2/14/22	Mon 2/14/22
14		Job Approval	1 day	Mon 2/14/22	Mon 2/14/22
15					
16		**Permits & Make-Ready**			
17		Permit Application & Invoicing	1 day	Wed 2/2/22	Wed 2/2/22
18		Towns or City Permit	0 days		
19		Make Ready Construction	1 day	Tue 2/8/22	Tue 2/8/22
20		AEP	1 day	Tue 2/8/22	Tue 2/8/22
21		Verizon	1 day	Tue 2/8/22	Tue 2/8/22
22		PVEC			
23		ODP			

Project: Phase 3 Mount Rogers
Date: Tue 8/11/20

Task		Inactive Summary		External Tasks	
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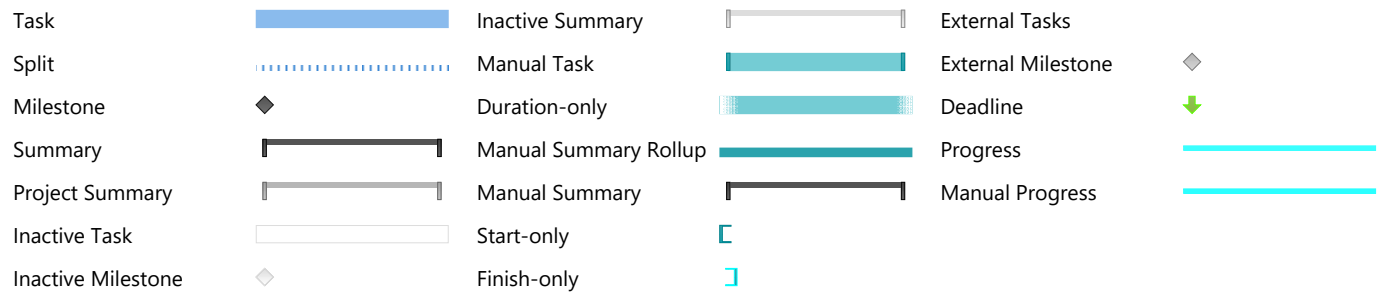
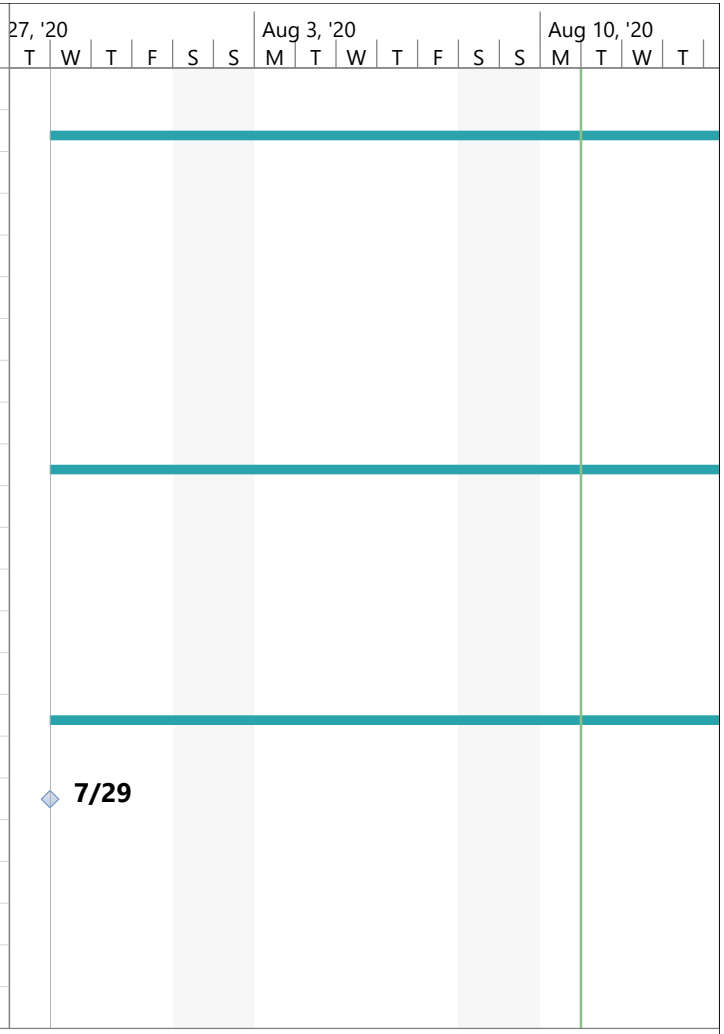
Inactive Task		Start-only			
Inactive Milestone		Finish-only			

ID	Task Mode	Task Name	Duration	Start	Finish
24					
25		**Construction Task**			
26		Review Job Package	1 day	Mon 2/14/22	Mon 2/14/22
27		Assigned Contractor	1 day	Mon 2/14/22	Mon 2/14/22
28		Create PO	0 days		
29		Stage Job Materials	1 day	Wed 1/5/22	Wed 1/5/22
30		Materials Requested	1 day	Mon 2/14/22	Mon 2/14/22
31		Consturction Start/Finish	375 days	Wed 2/2/22	Tue 7/11/23
32		Make Ready	50 days	Mon 2/14/22	Fri 4/22/22
33		Strand	120 days	Thu 4/14/22	Wed 9/28/22
34		Lash Fiber	145 days	Tue 9/27/22	Mon 4/17/23
35		Cabinet Set	2 days	Thu 2/2/23	Fri 2/3/23
36		Splicing	58 days	Mon 4/17/23	Wed 7/5/23
37		Redlines	1 day	Sat 7/8/23	Sat 7/8/23
38		OTDR Results	1 day	Mon 7/10/23	Mon 7/10/23
39		Addresses for Project	1 day		
40					
41		**Closeout**			
42		Invoice			
43		Permits			
44		Materials Report			
45		Construction Manager Approvel			

Project: Phase 3 Mount Rogers
Date: Tue 8/11/20



Resource Names	% Complete	Comments
Barton John	0%	
	0%	
Barton John,Hughes Kevin	0%	
Barton John	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
Gillenwater Tyler,Trent Tommy	0%	
Gillenwater Tyler	0%	
Tim Nutter	0%	
Tim Nutter	0%	
	0%	
Hughes Kevin	0%	
	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
Hughes Kevin	0%	
	0%	
	0%	



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	0%	
Barton John,Tim Nutter	0%	
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	0%	
Barton John	0%	
Barton John	0%	
Barton John	0%	
	0%	
	0%	
	0%	
	0%	
Barton John,Gillenwater Tyler,Trent Tommy	0%	
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	0%	
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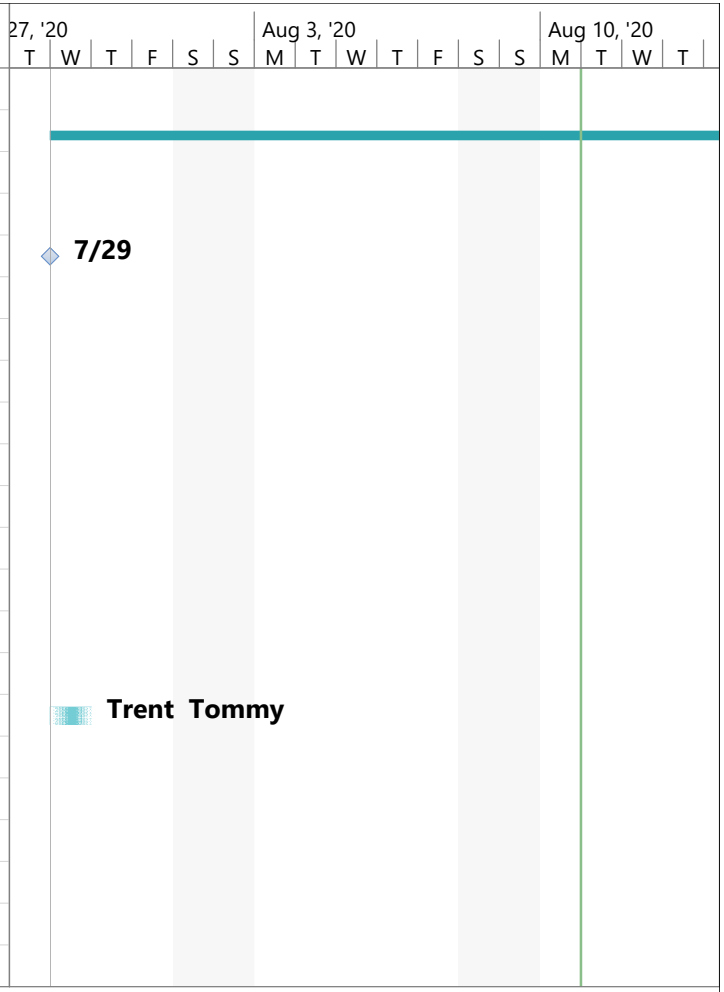

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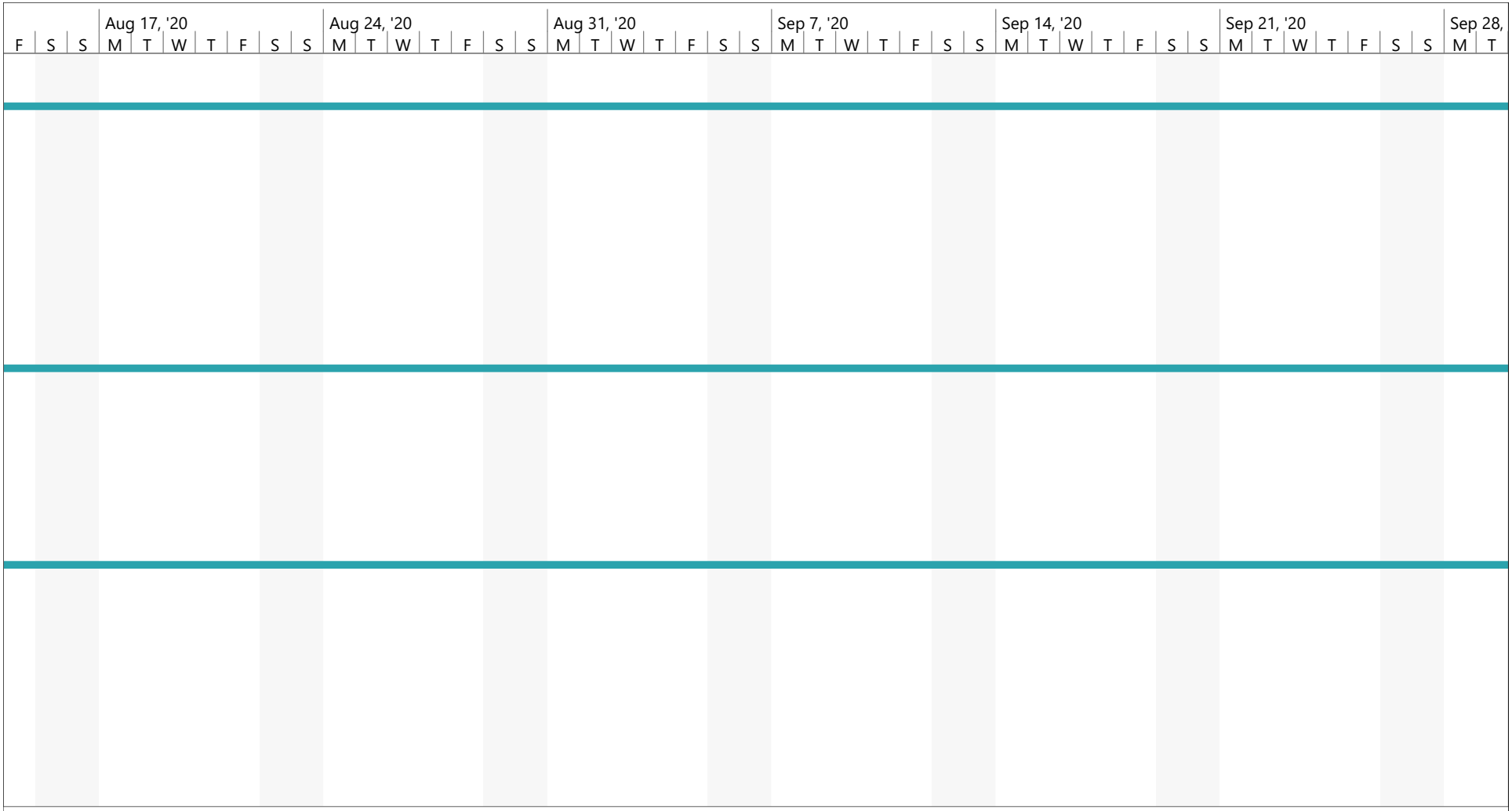

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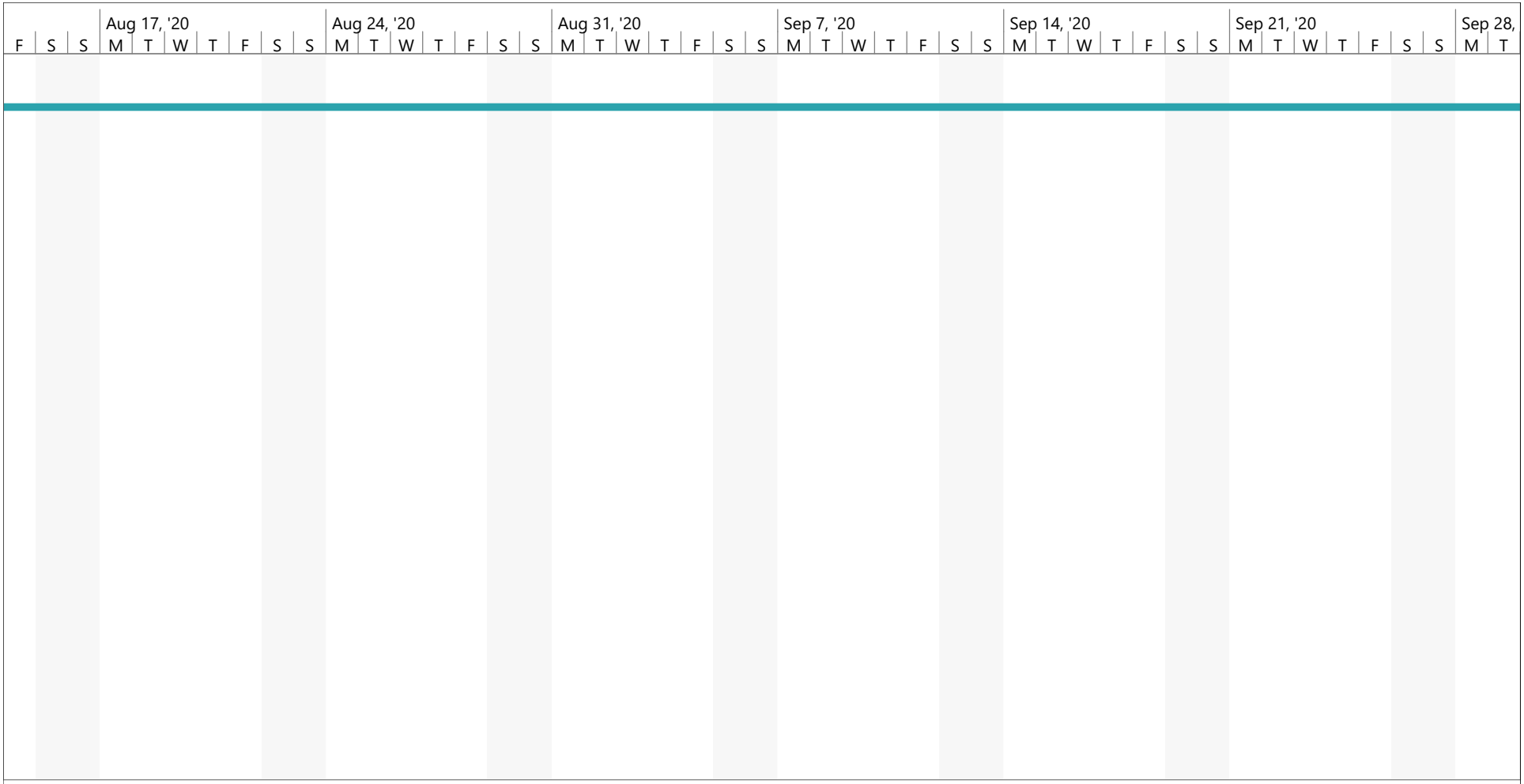

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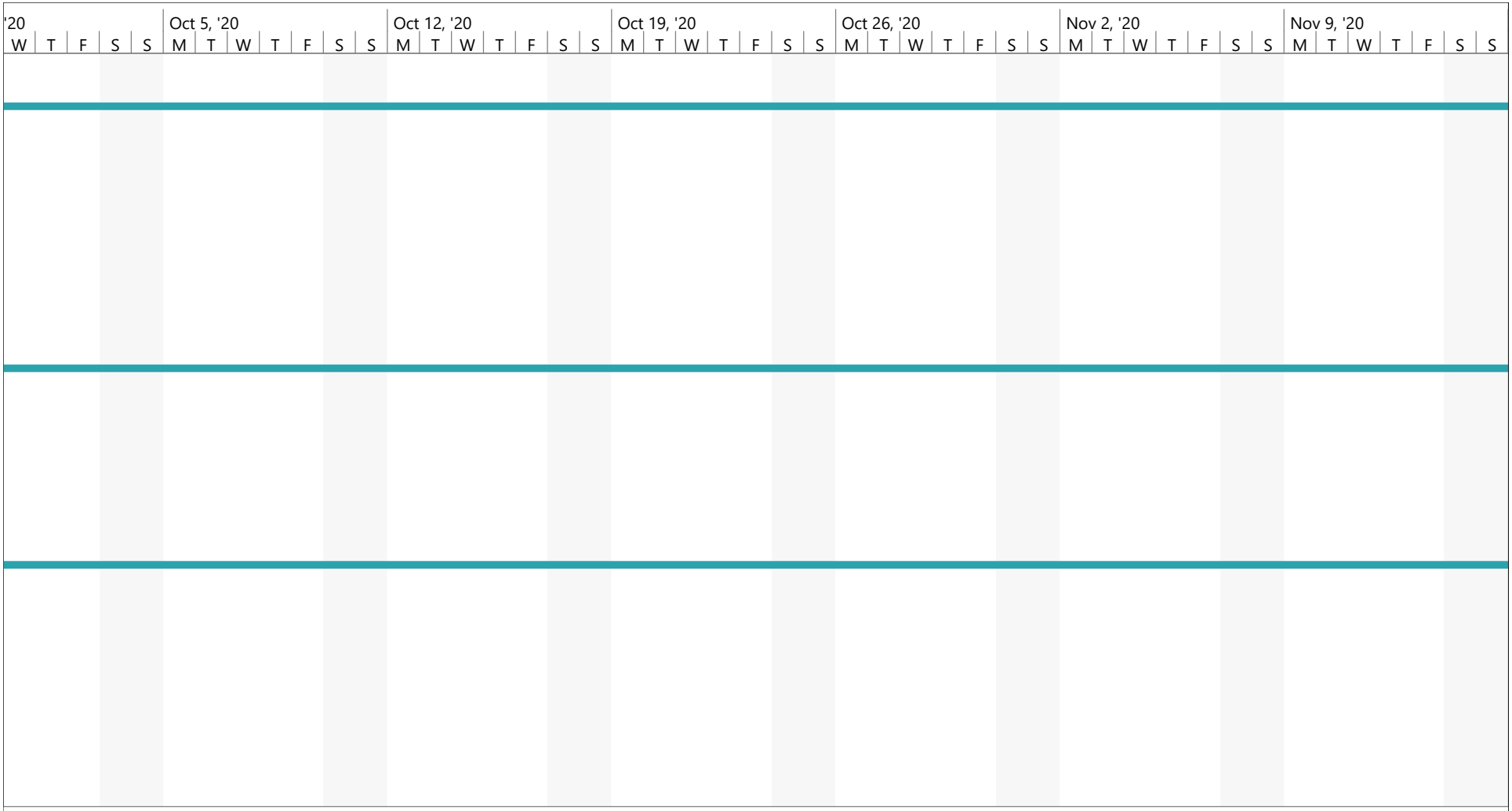

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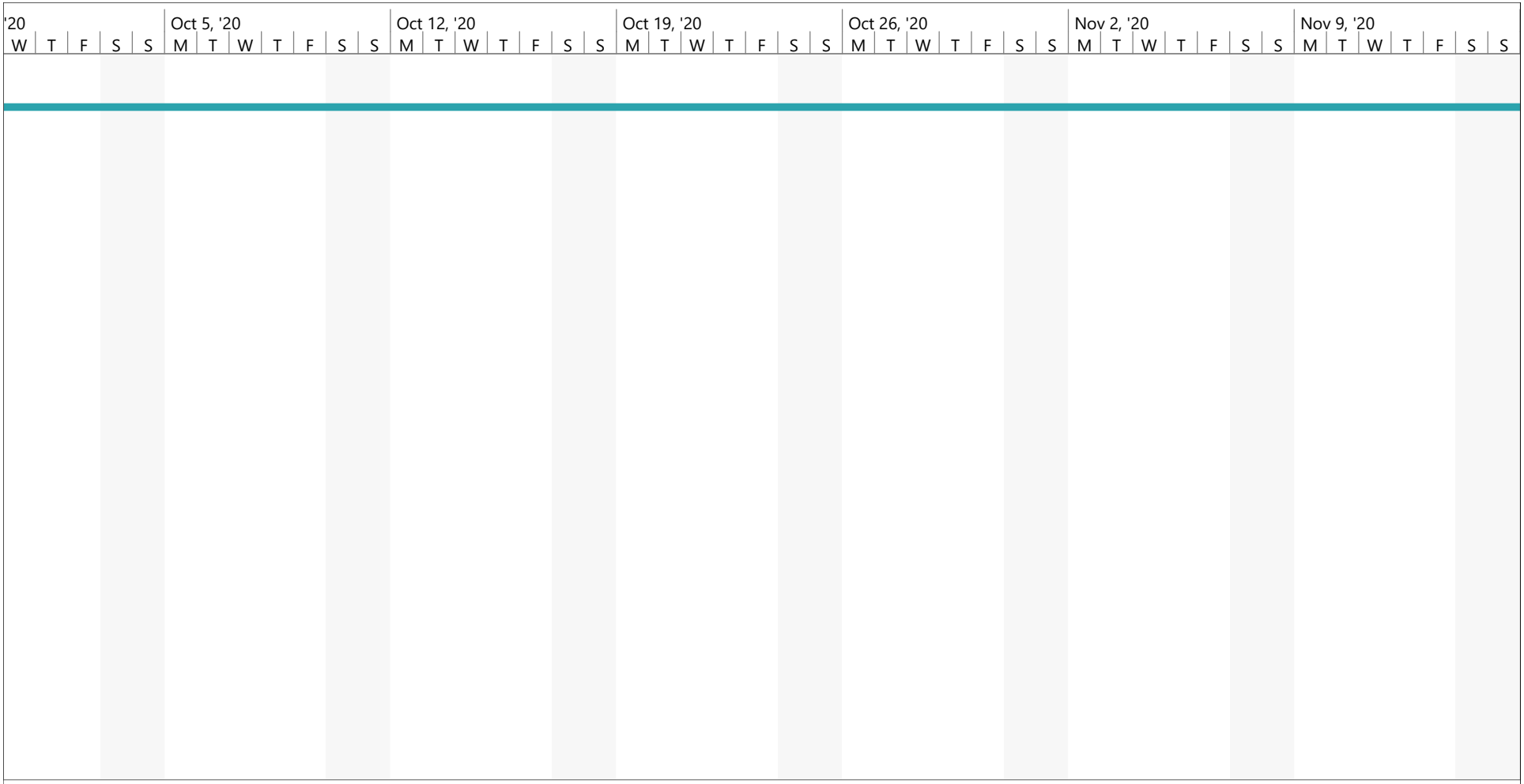

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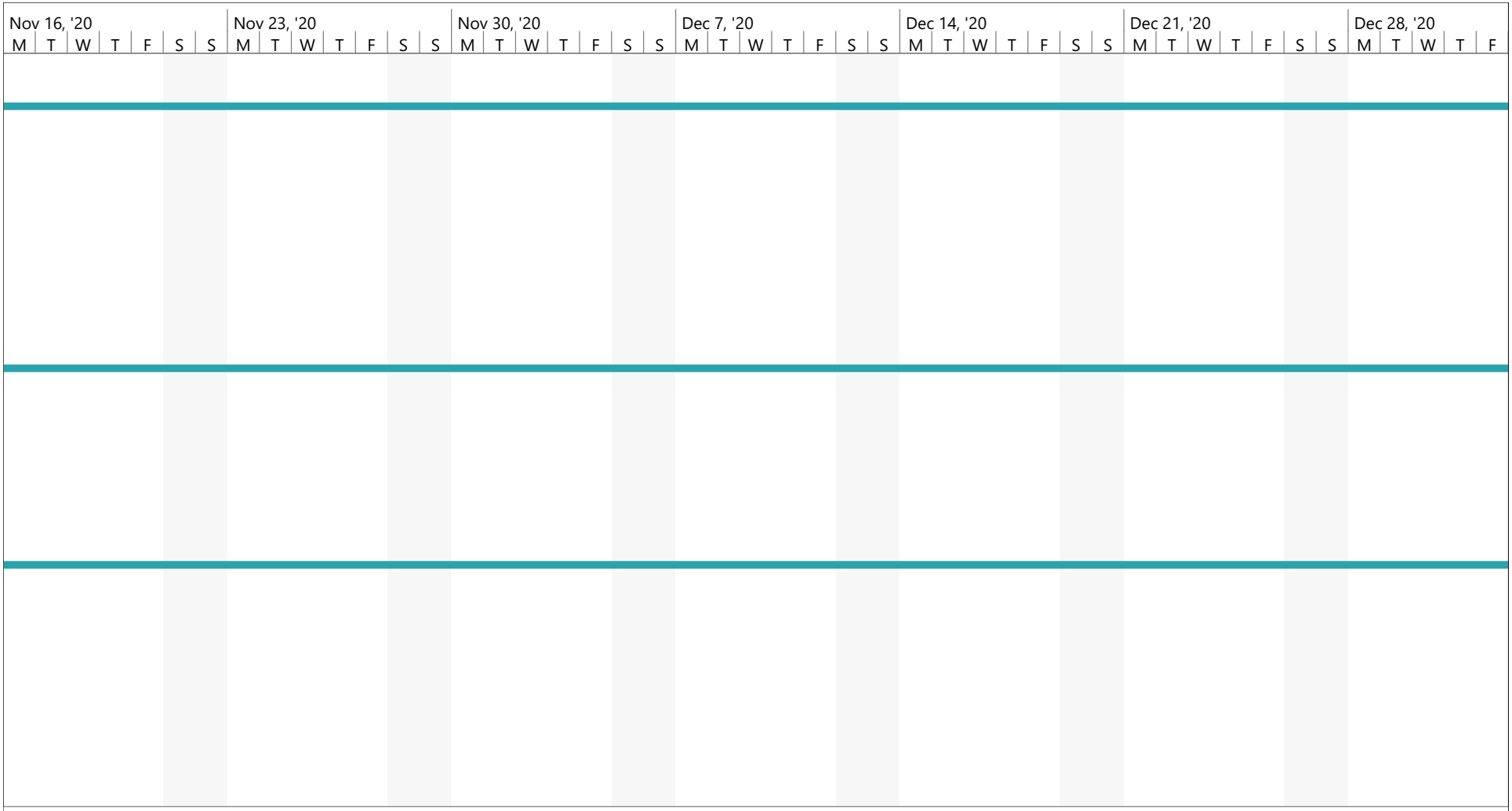

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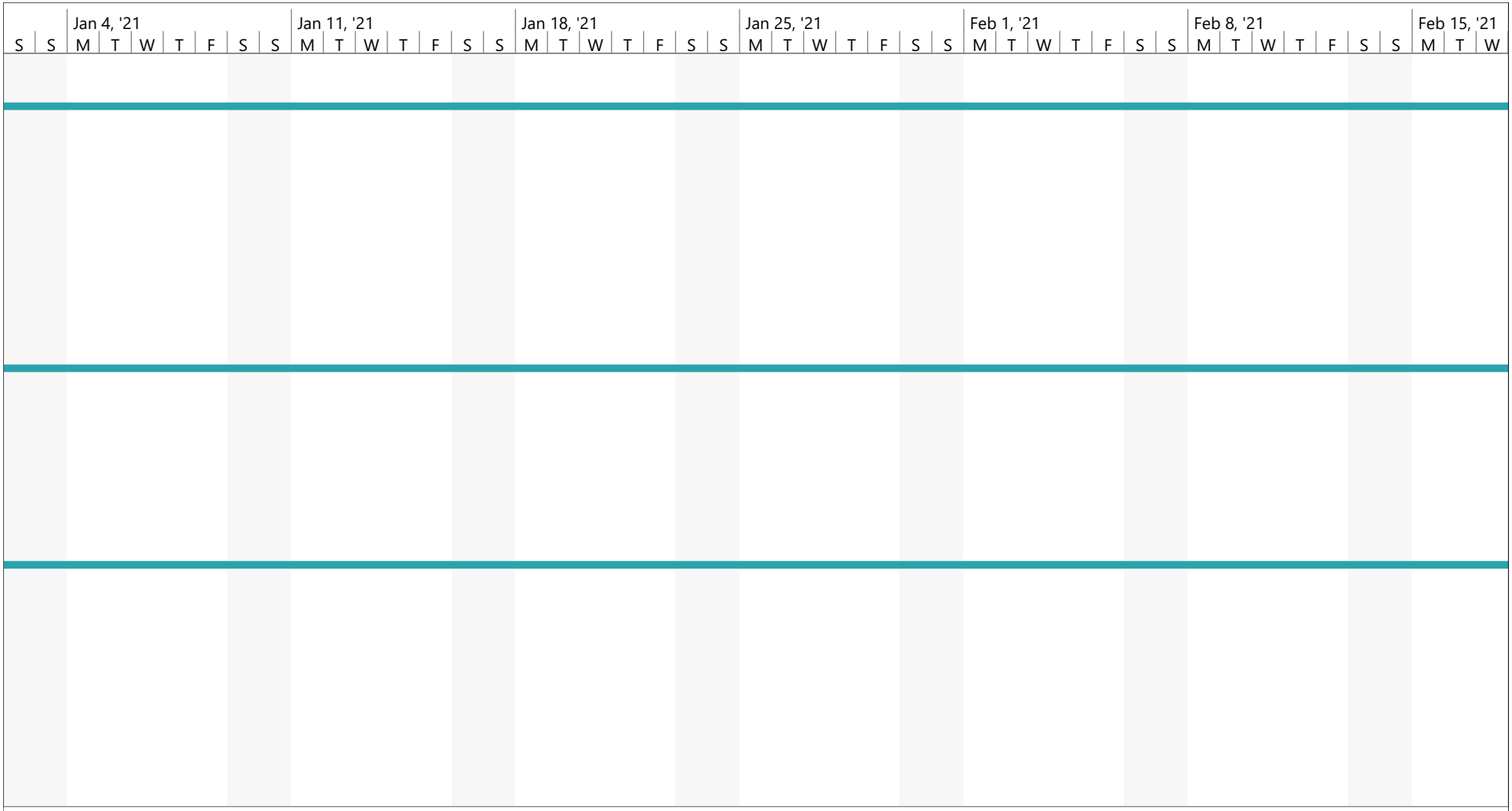

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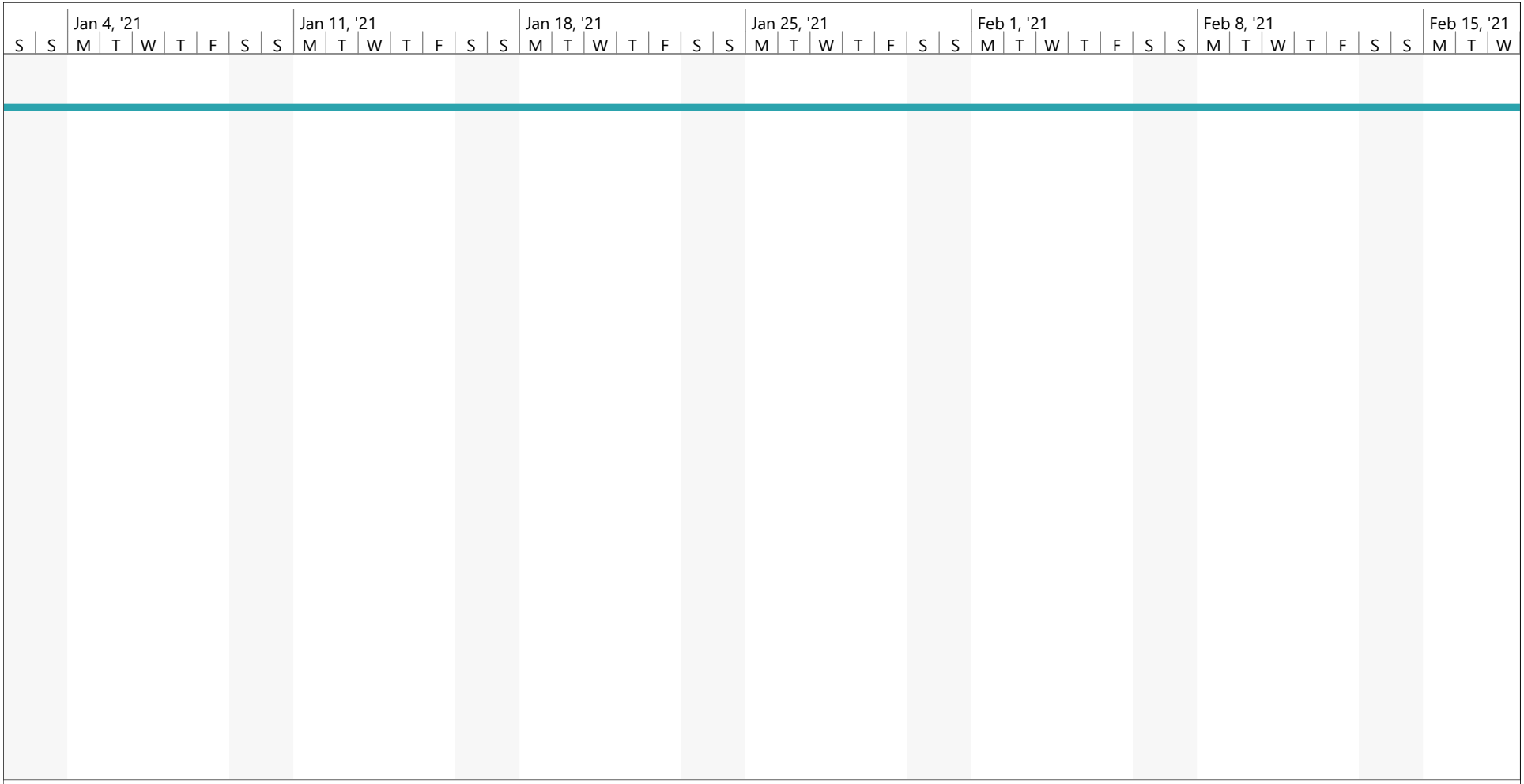

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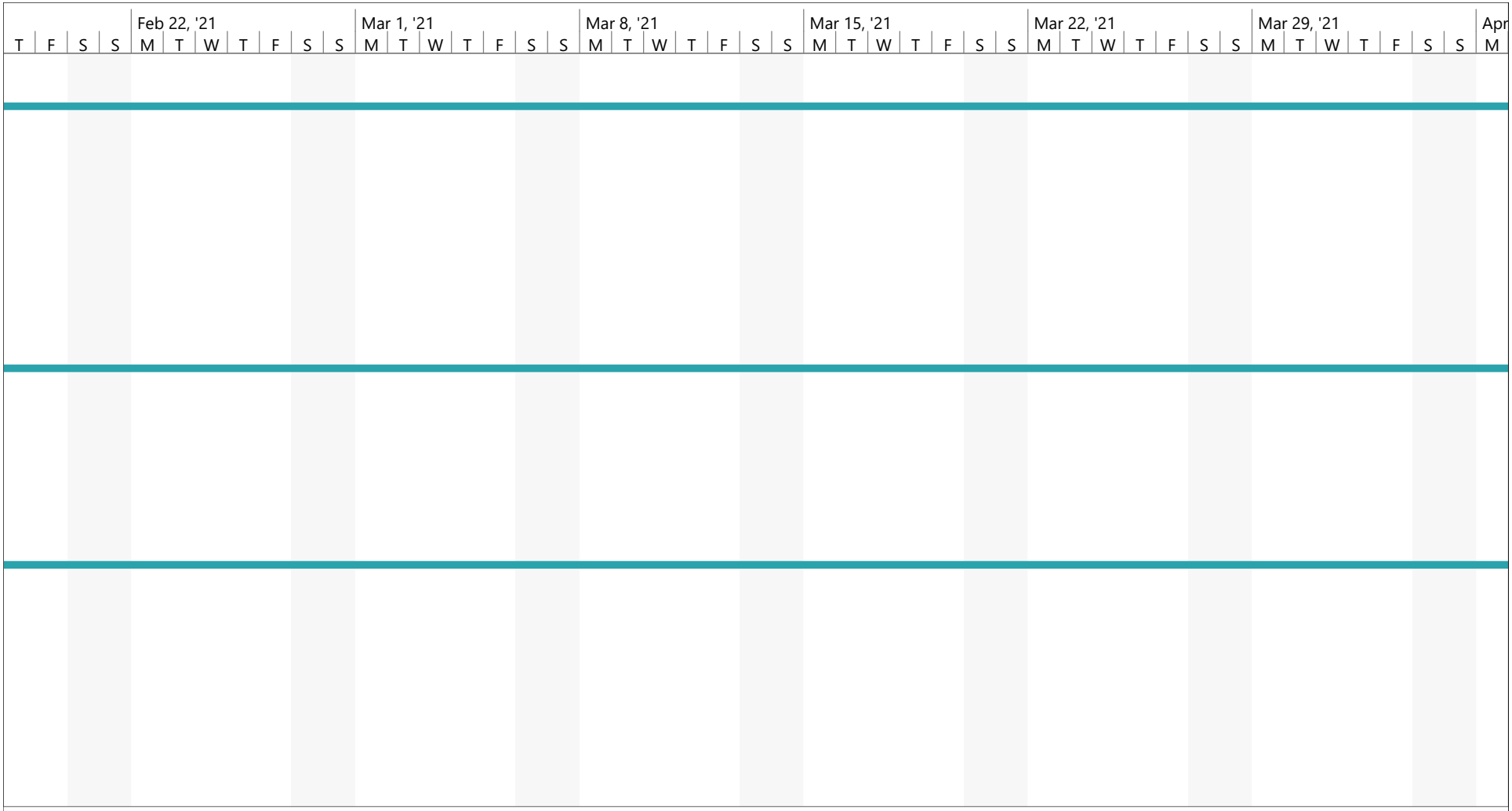

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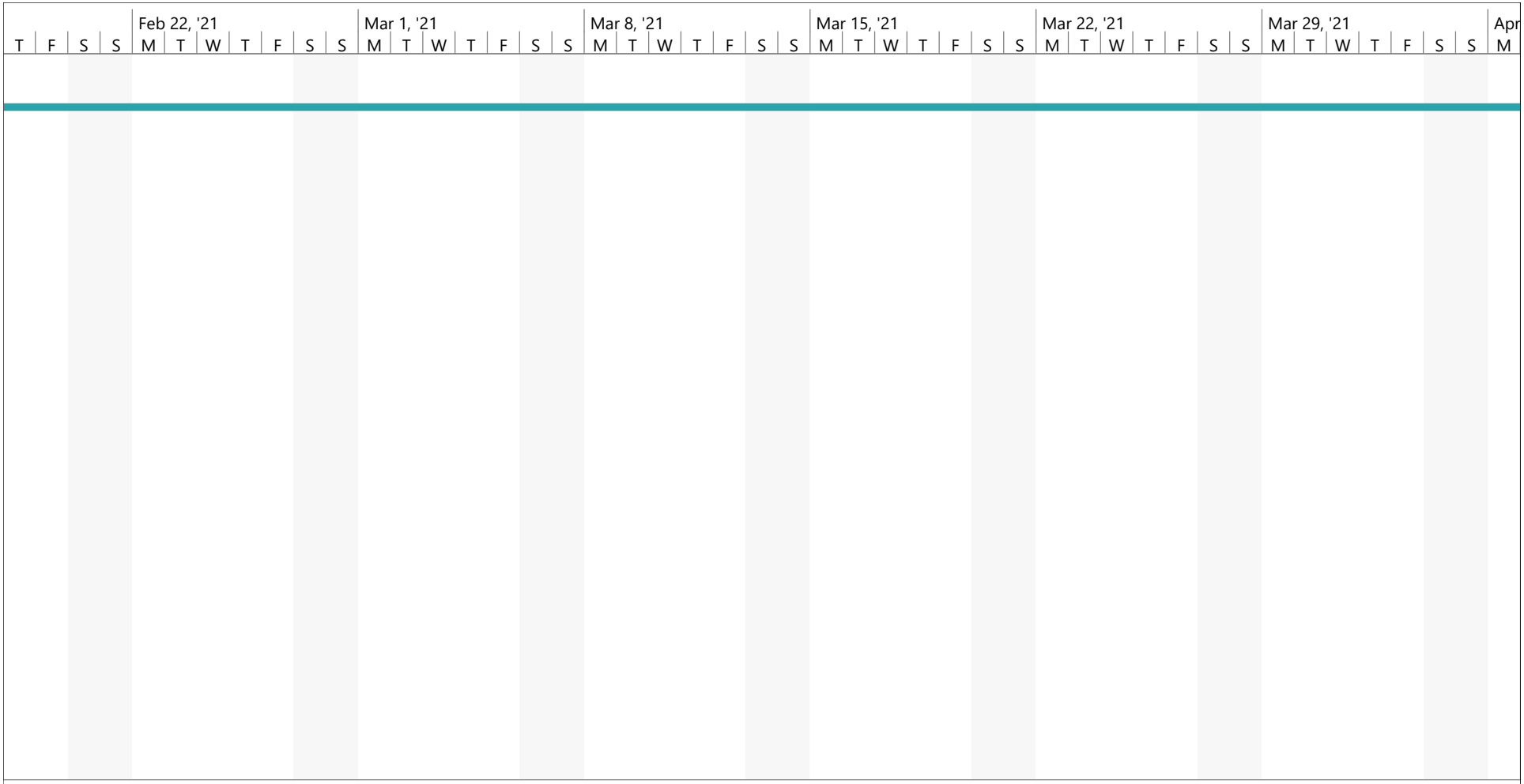

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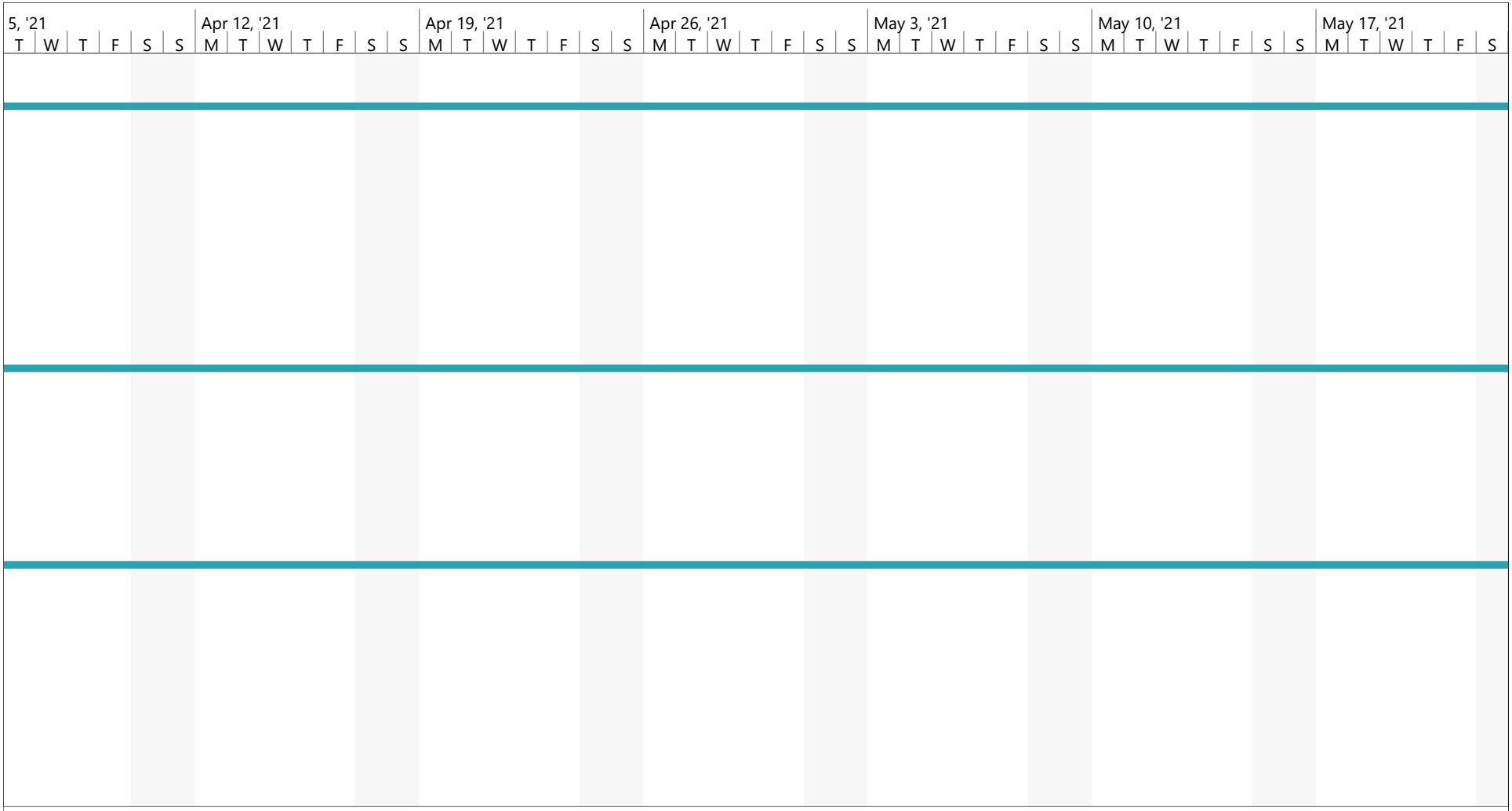

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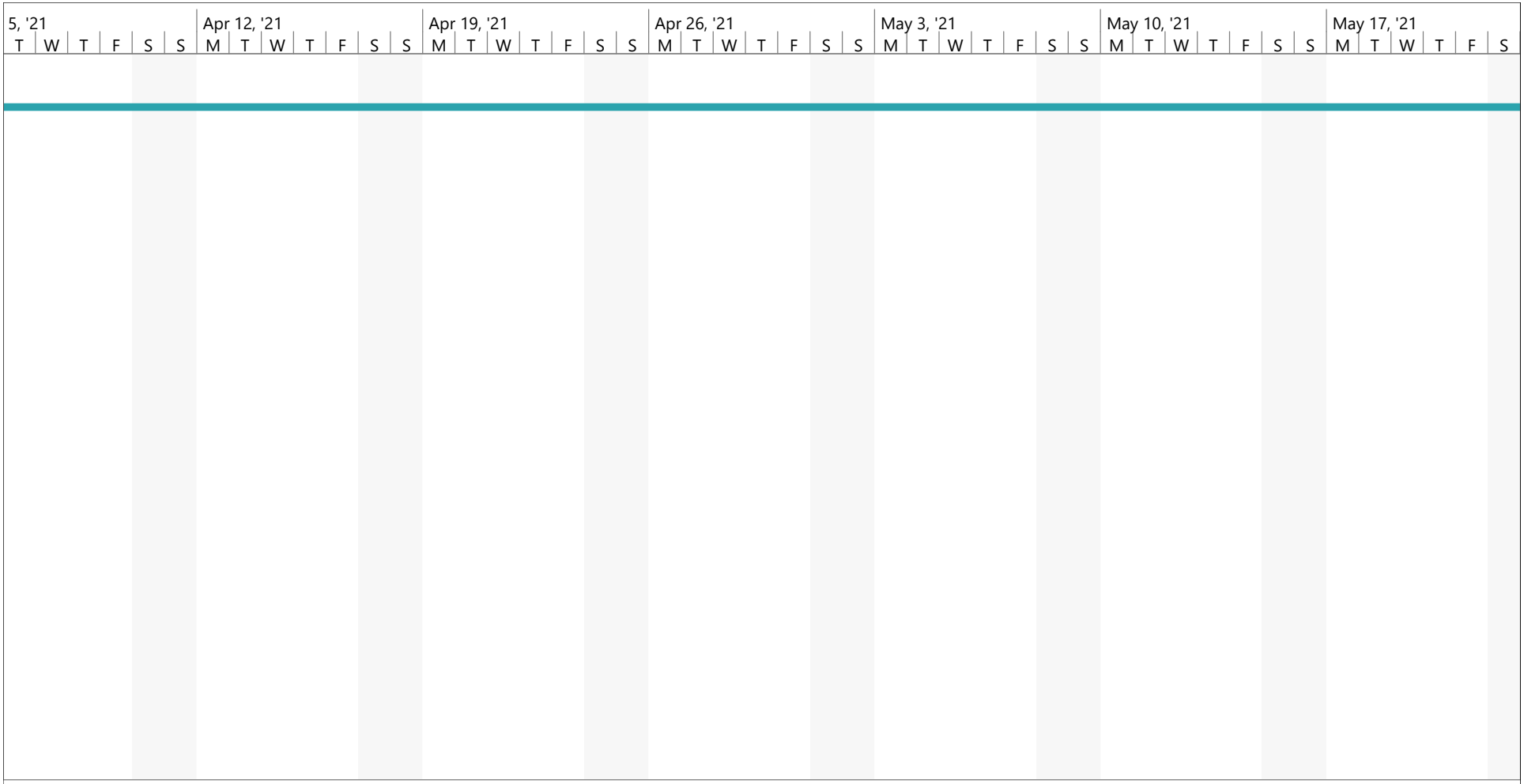

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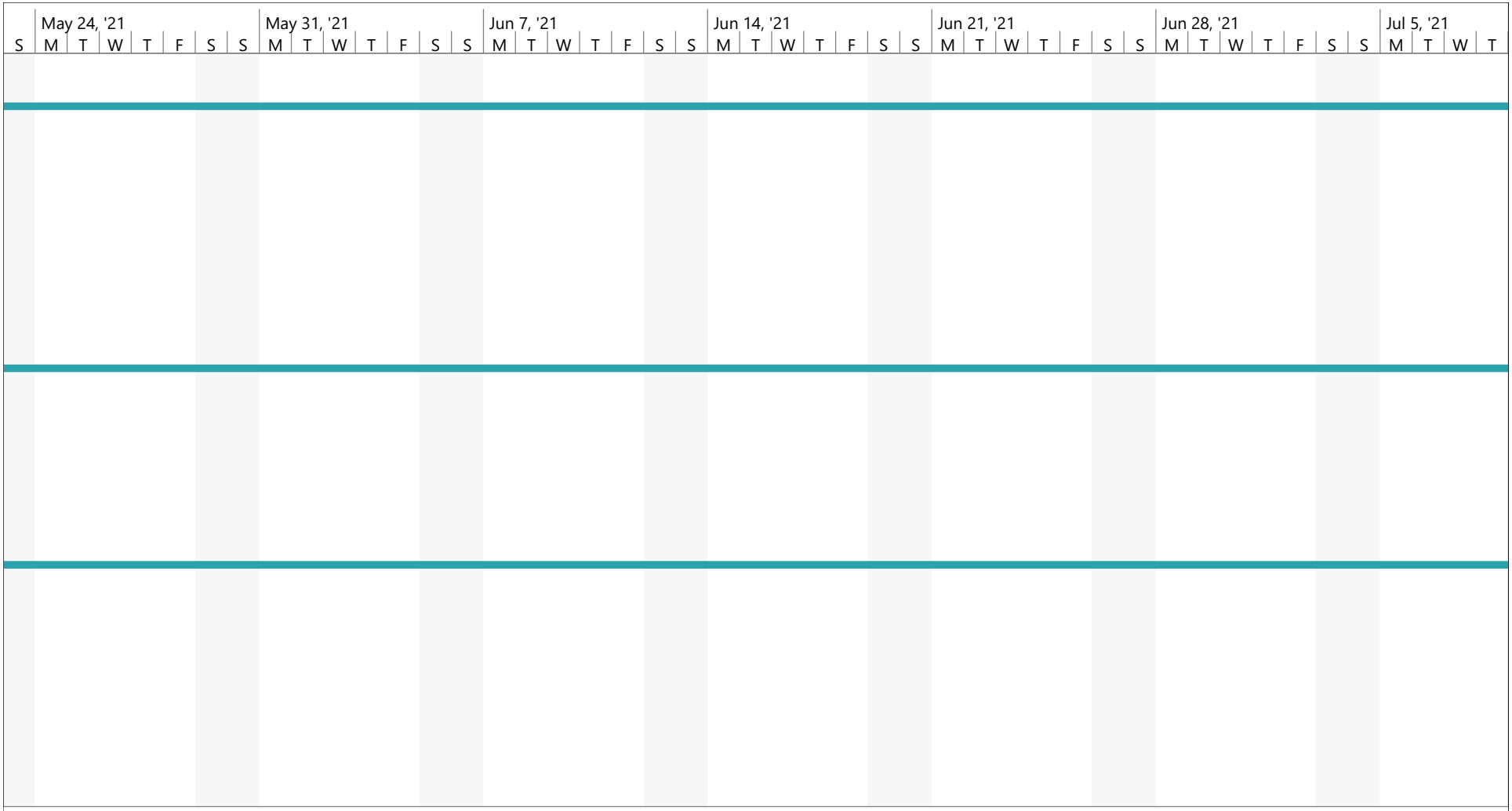

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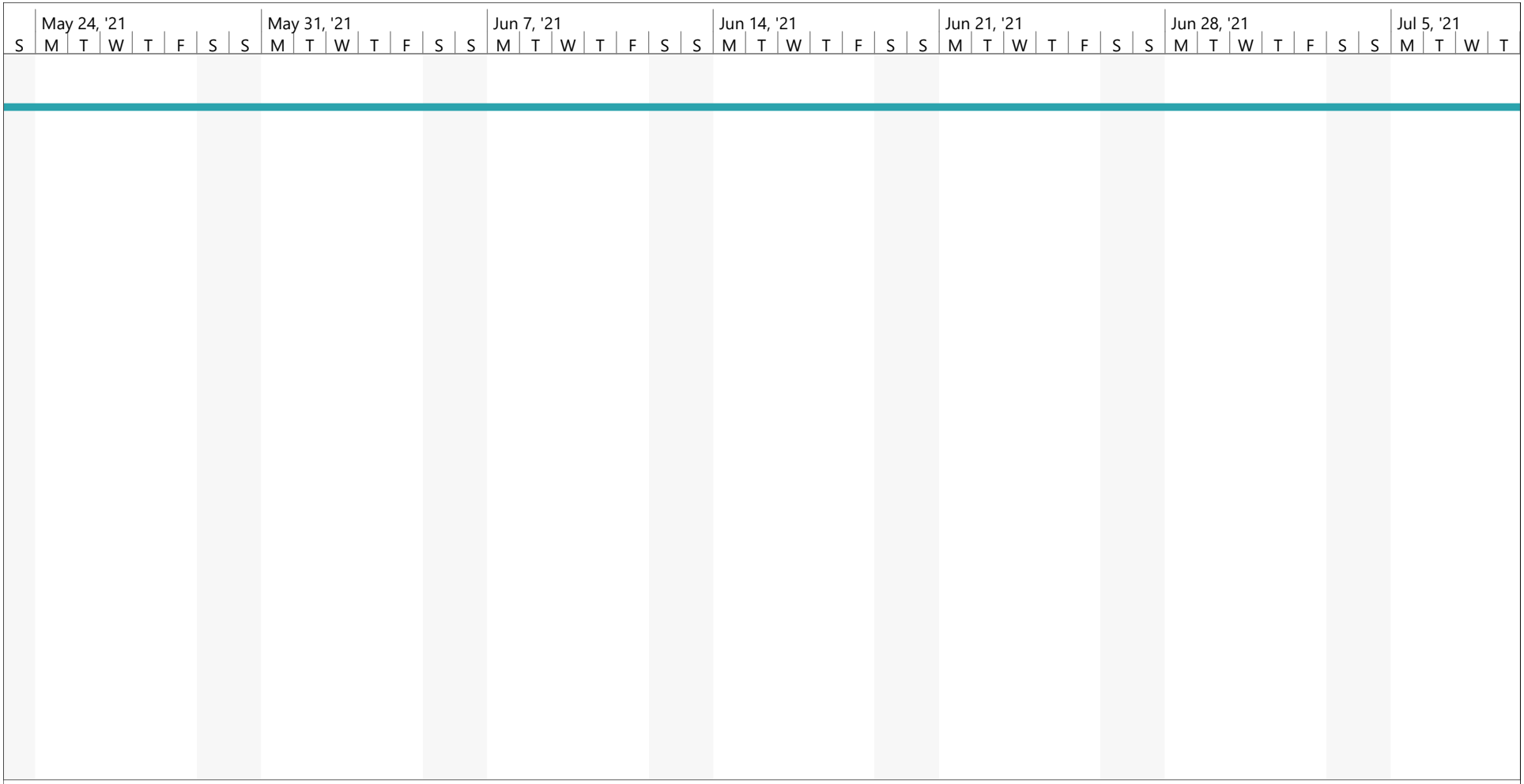

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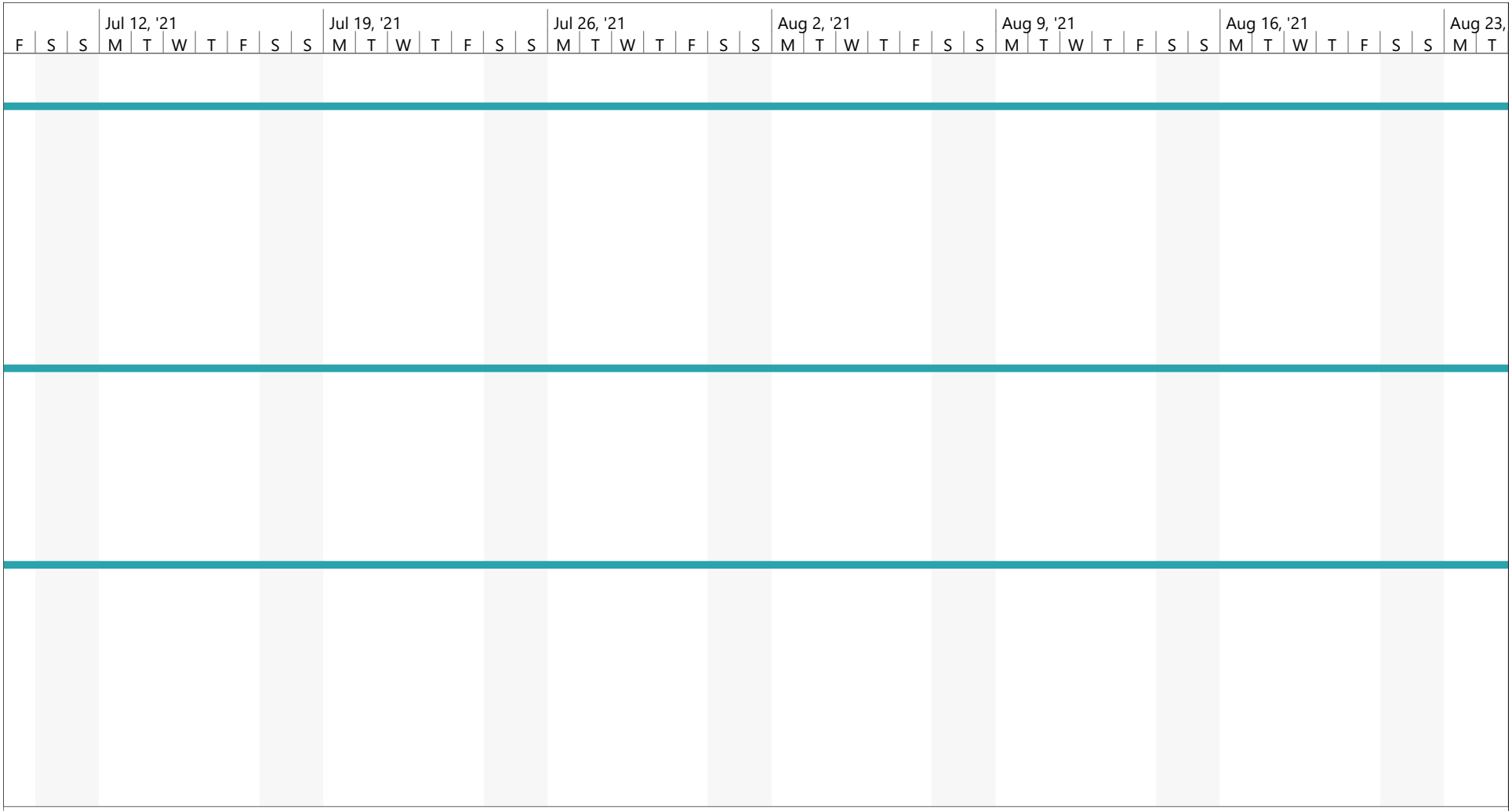

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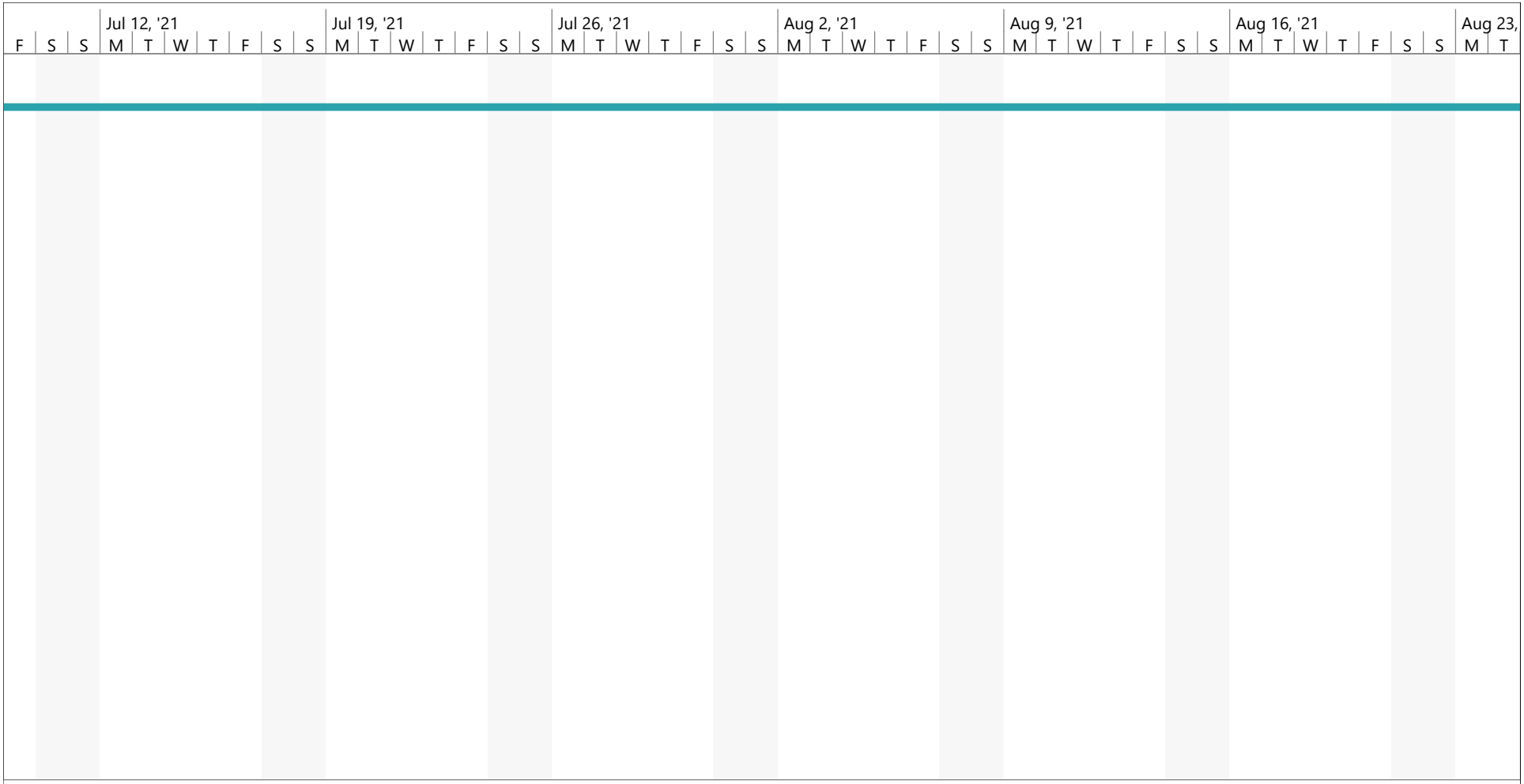

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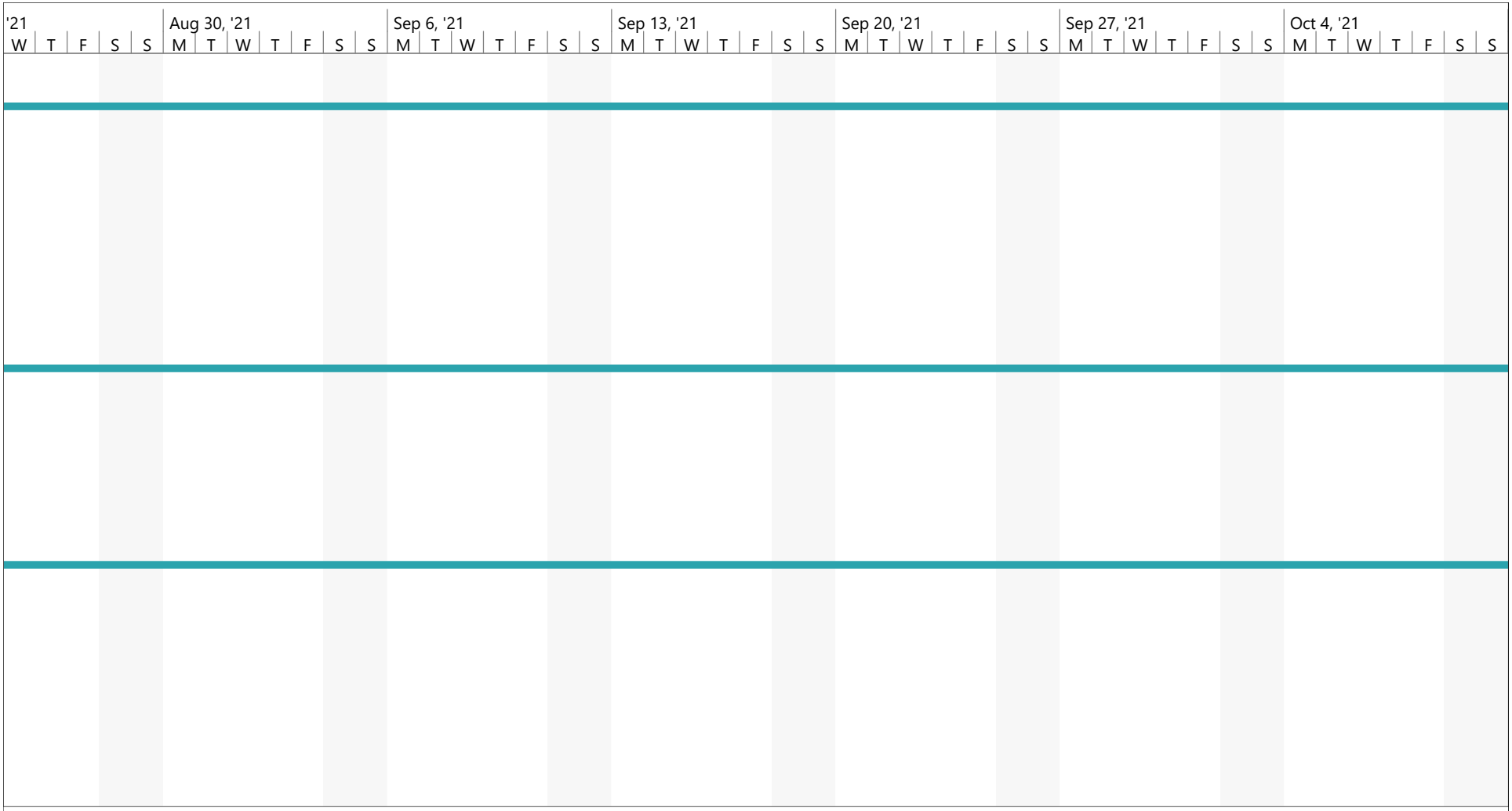

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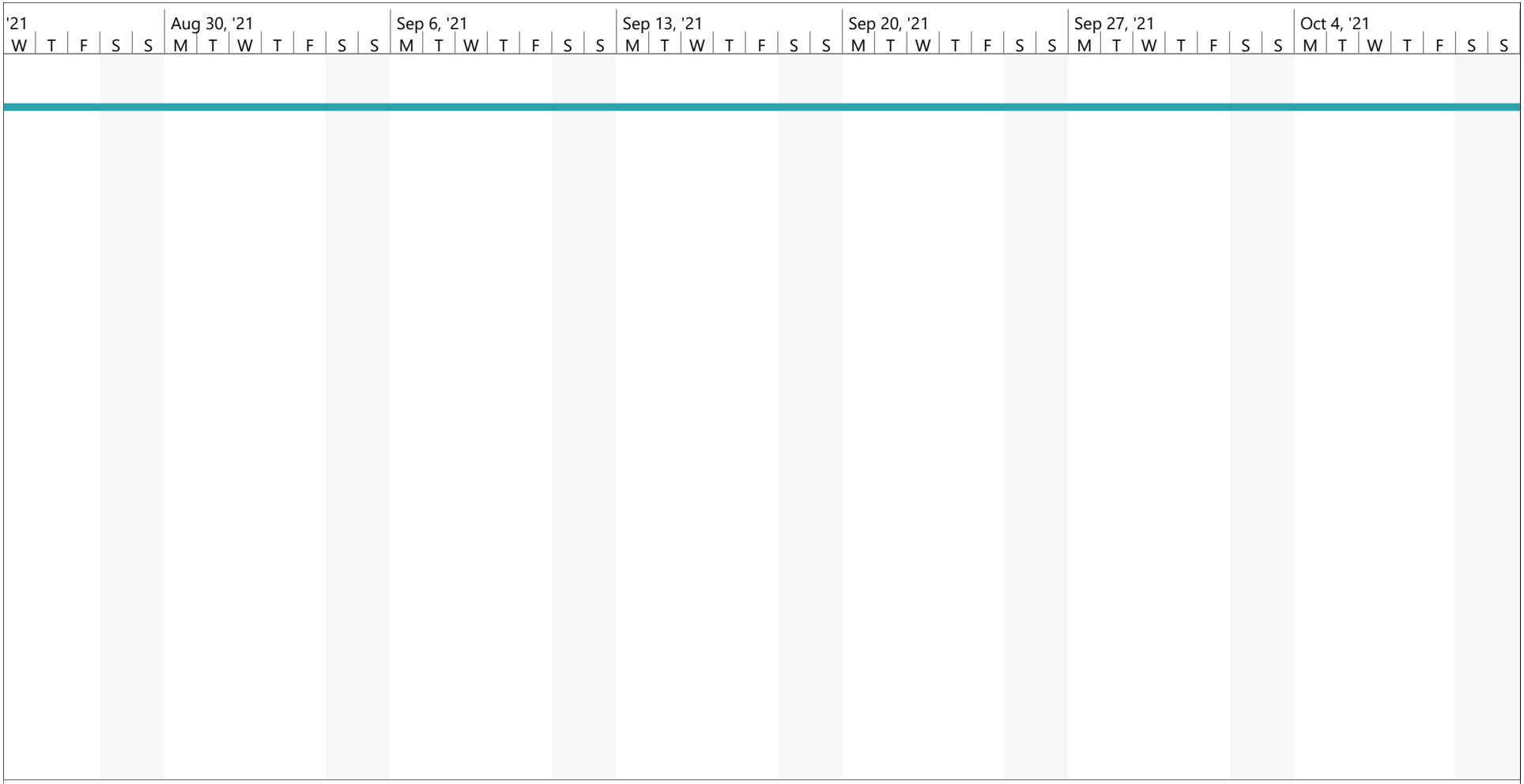

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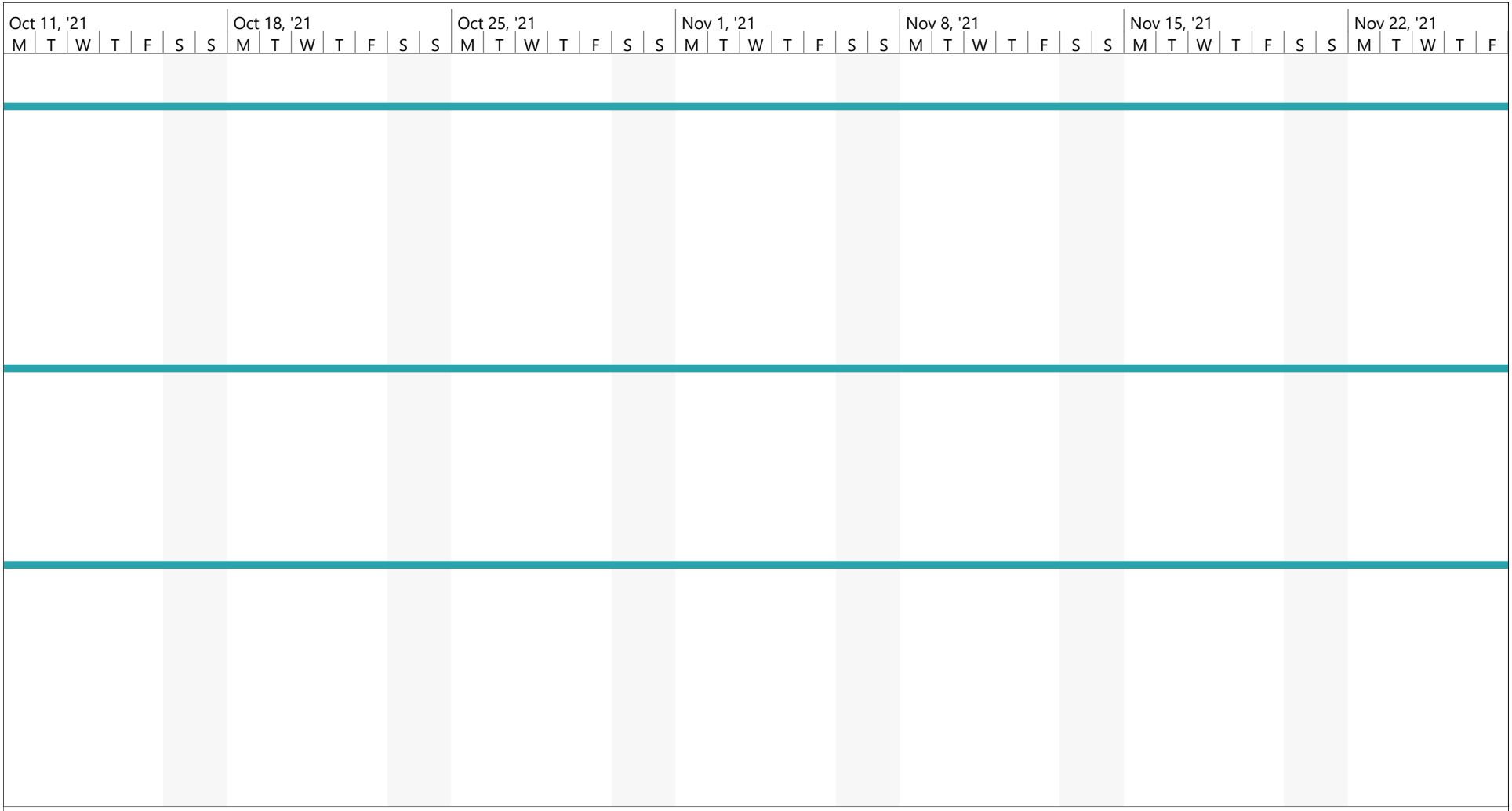
Inactive Task		Start-only			
Inactive Milestone		Finish-only			



Project: Phase 3 Mount Rogers
Date: Tue 8/11/20

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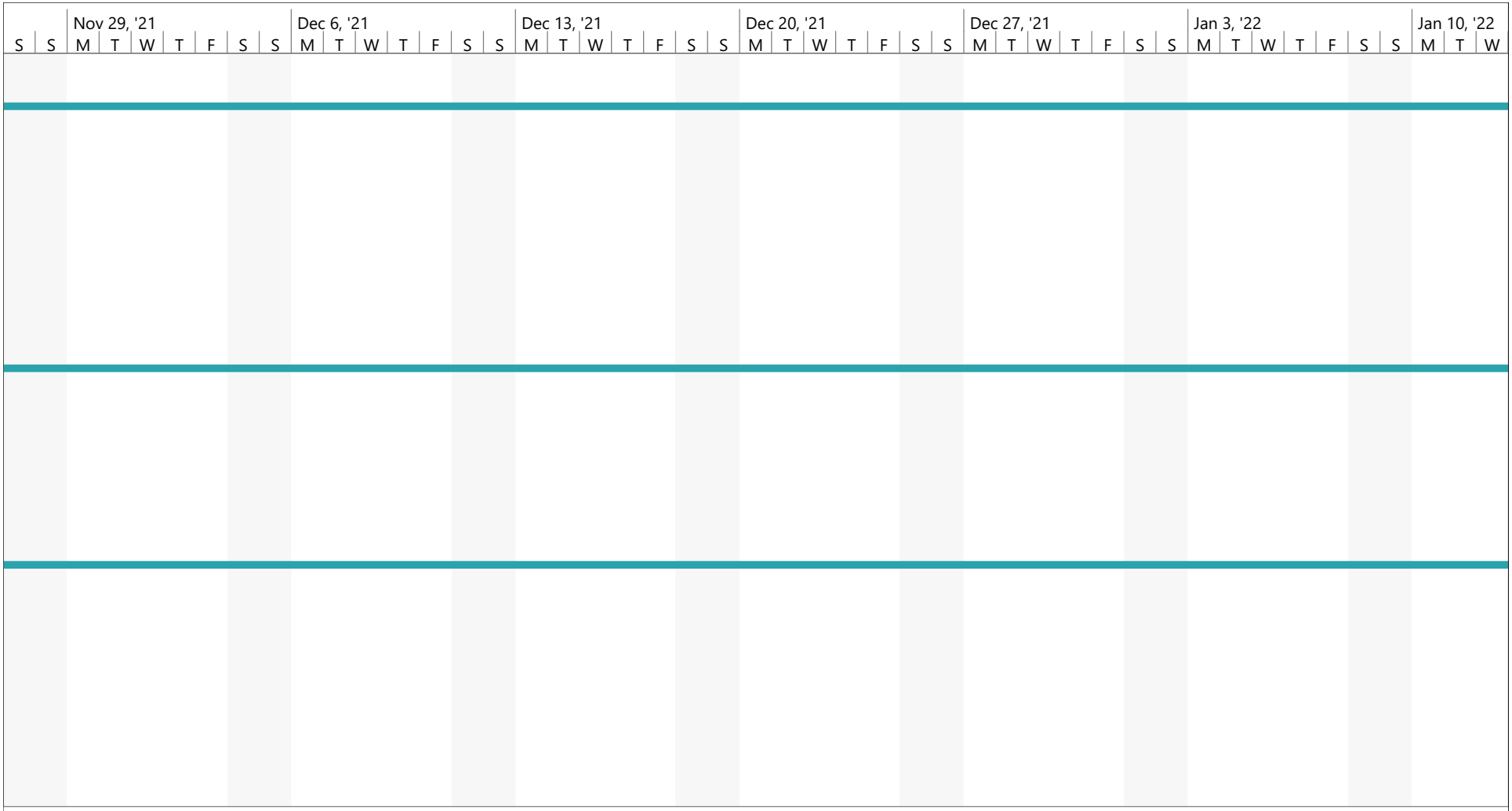

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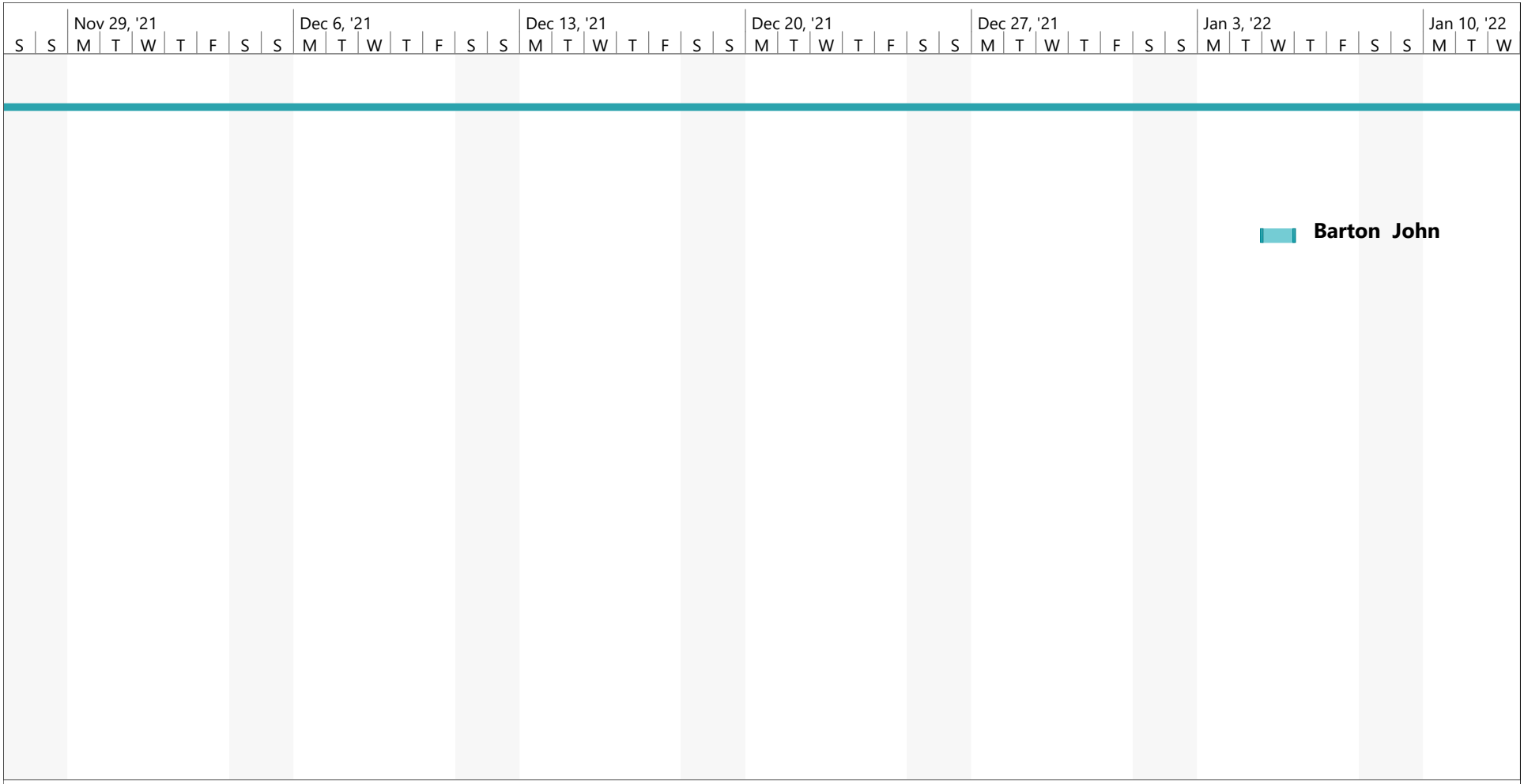

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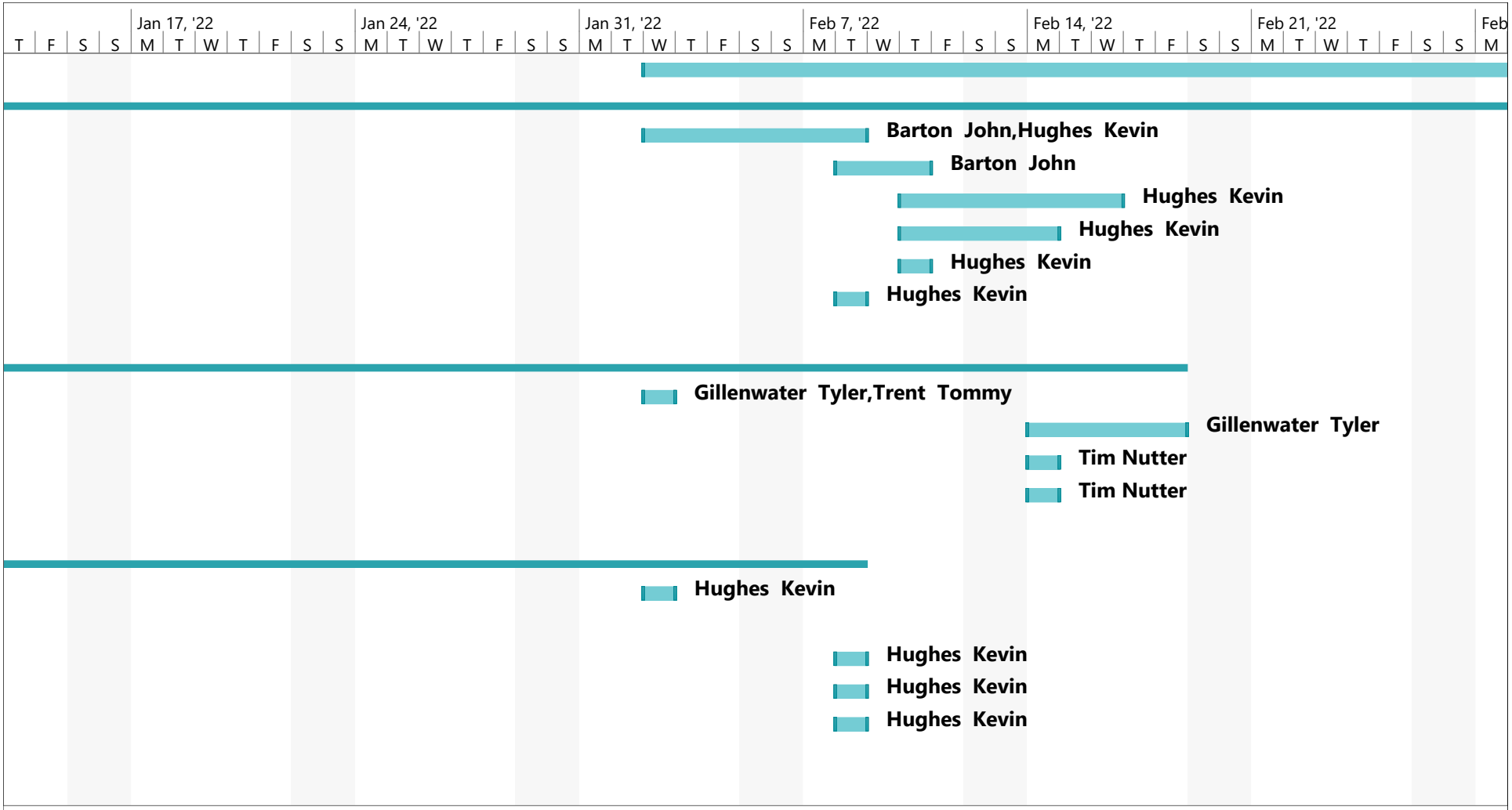

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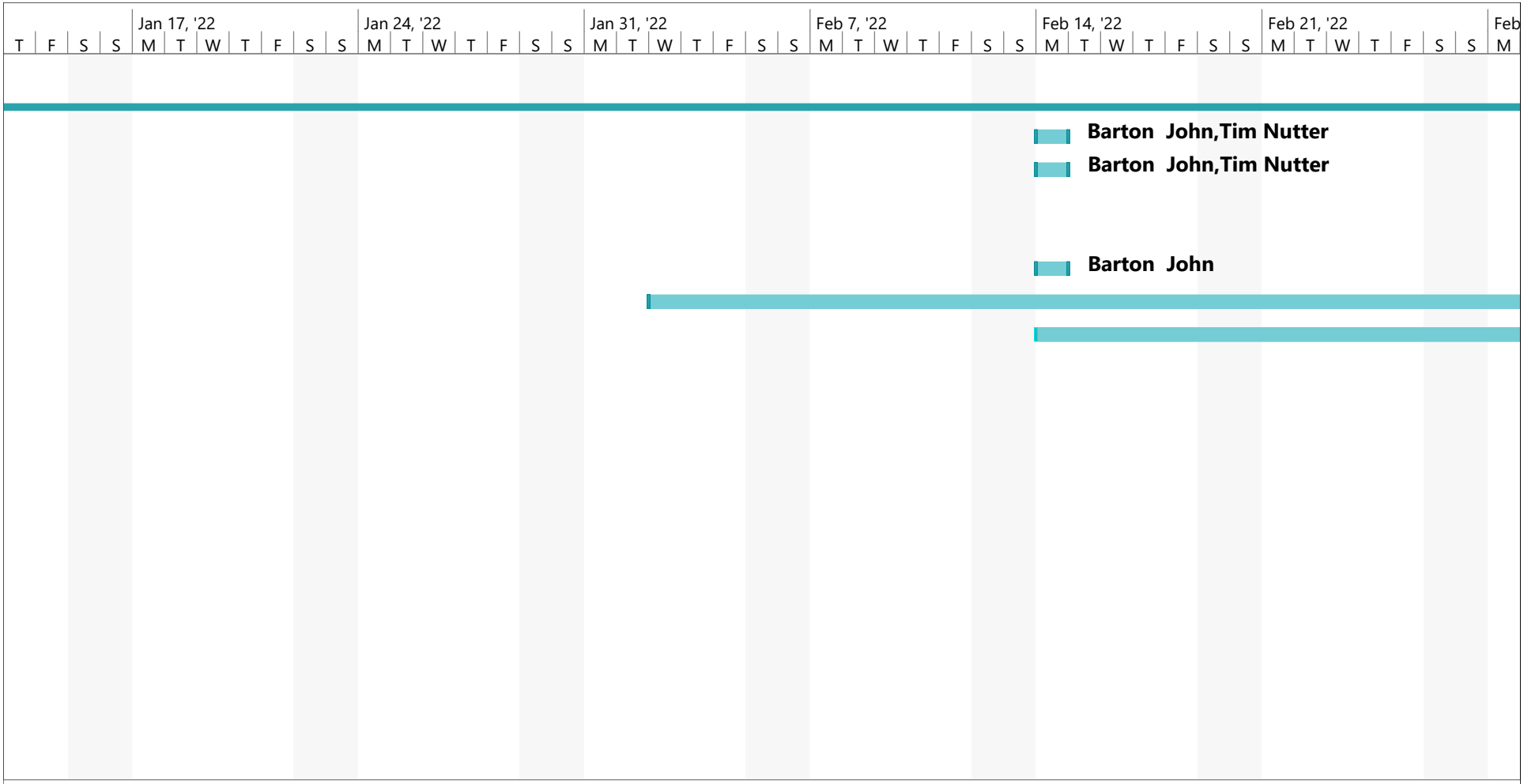

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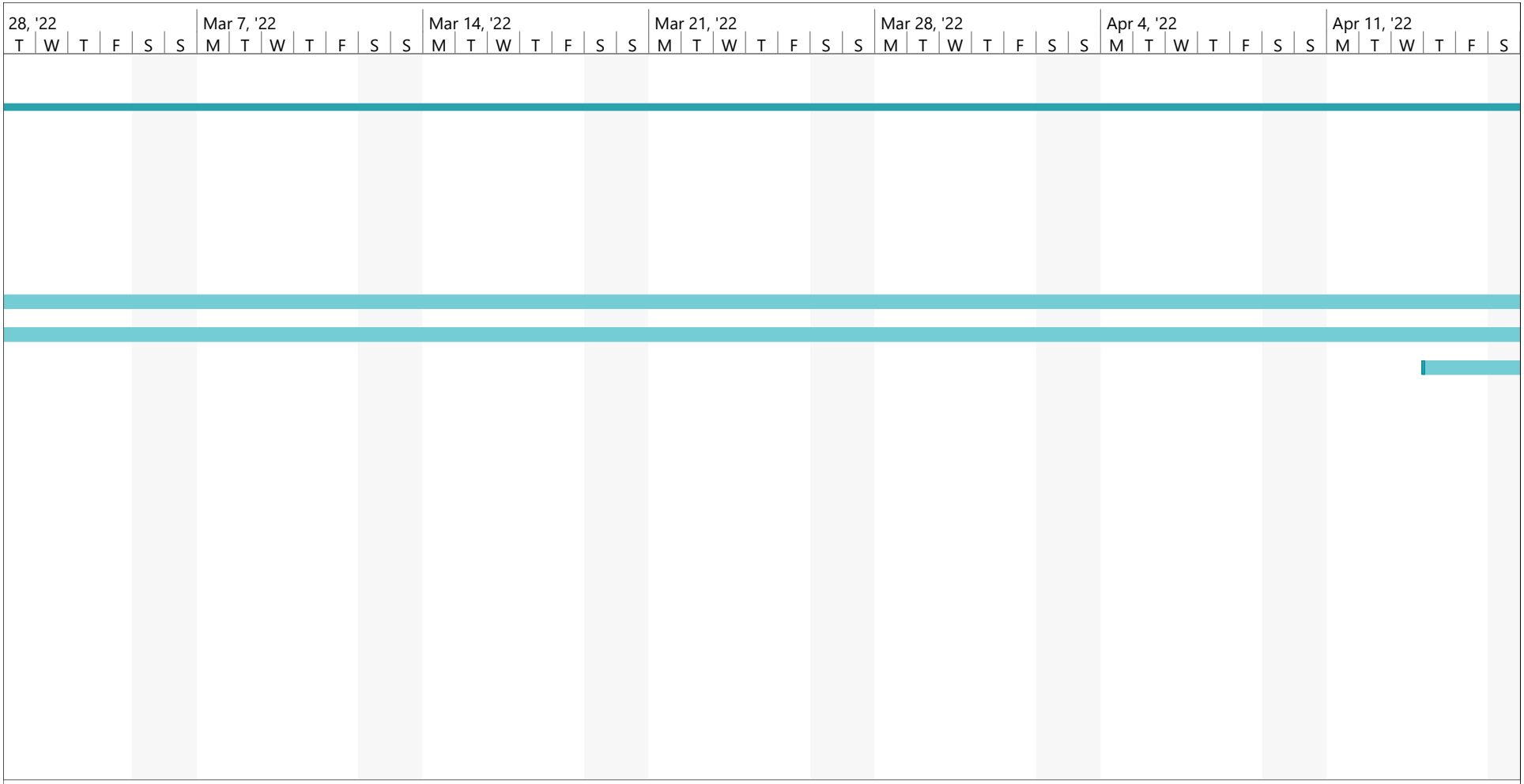

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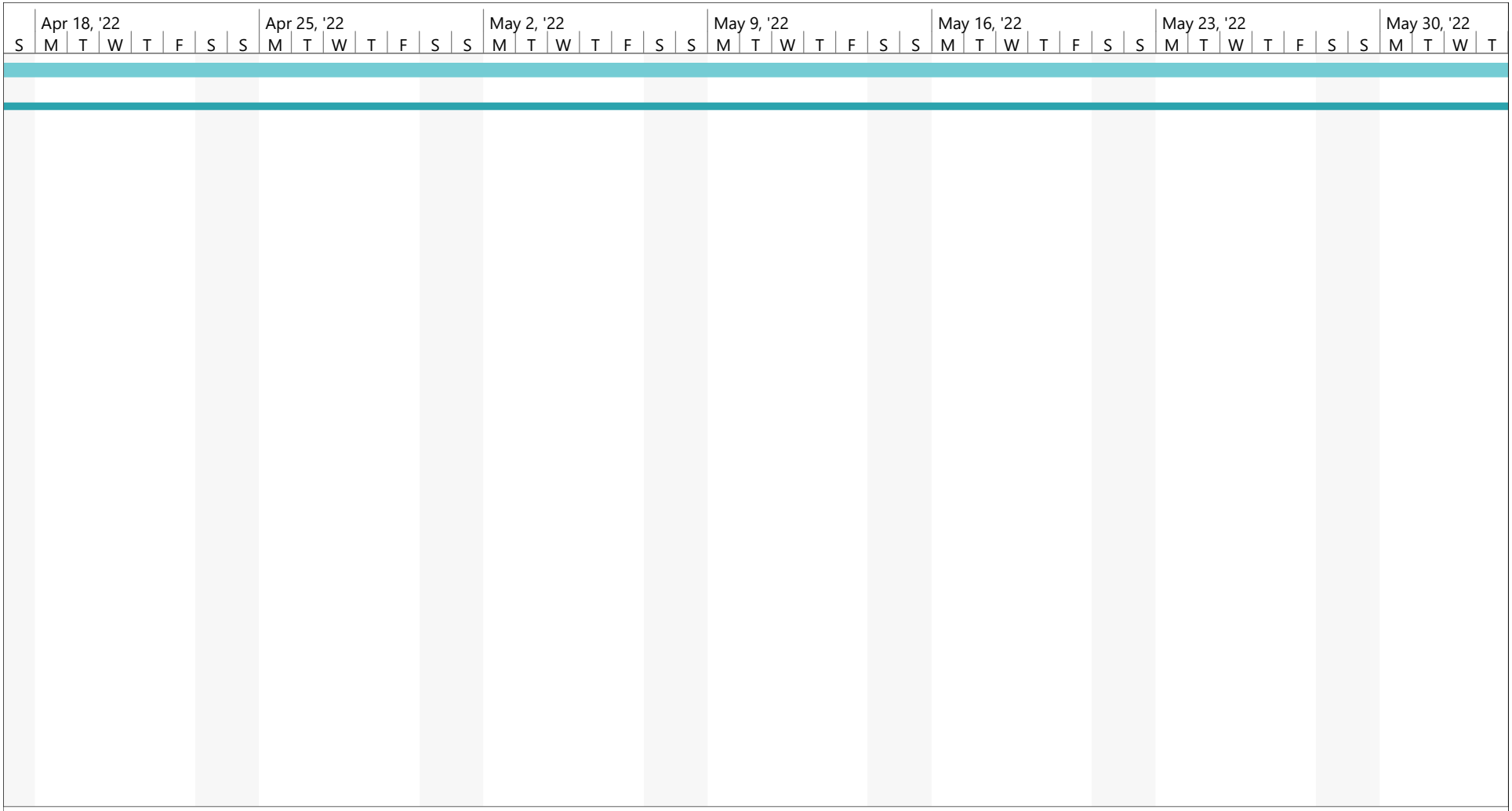

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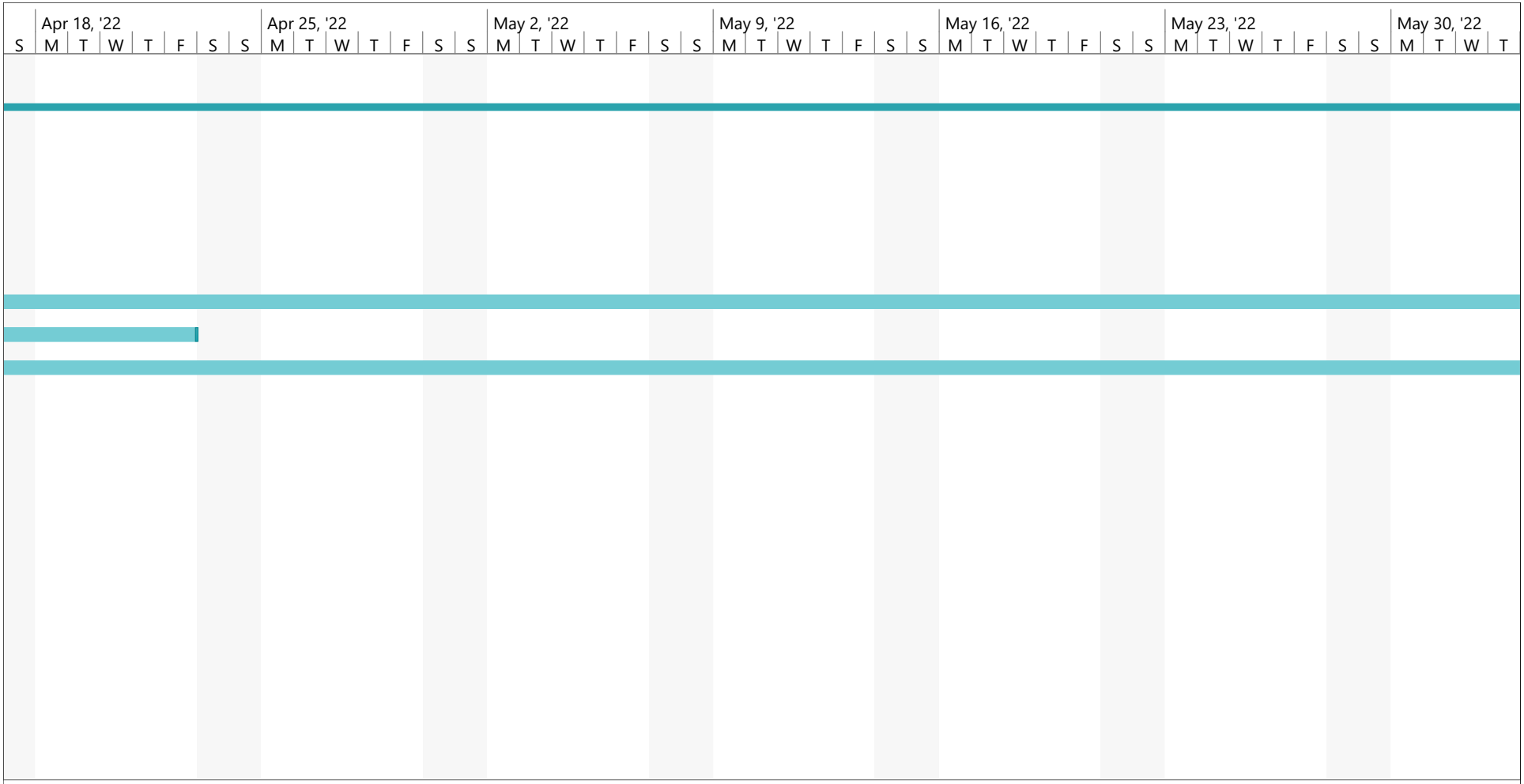

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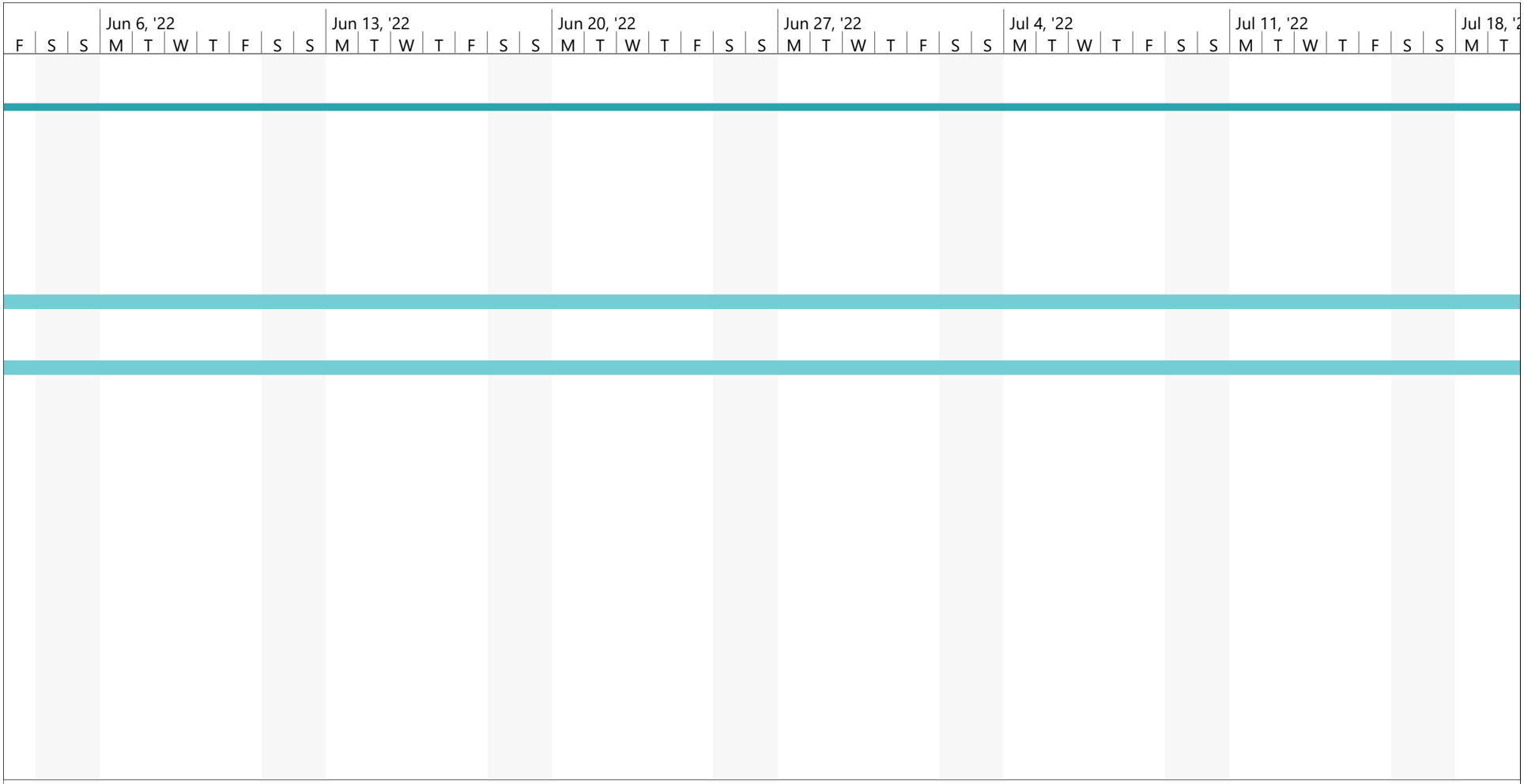

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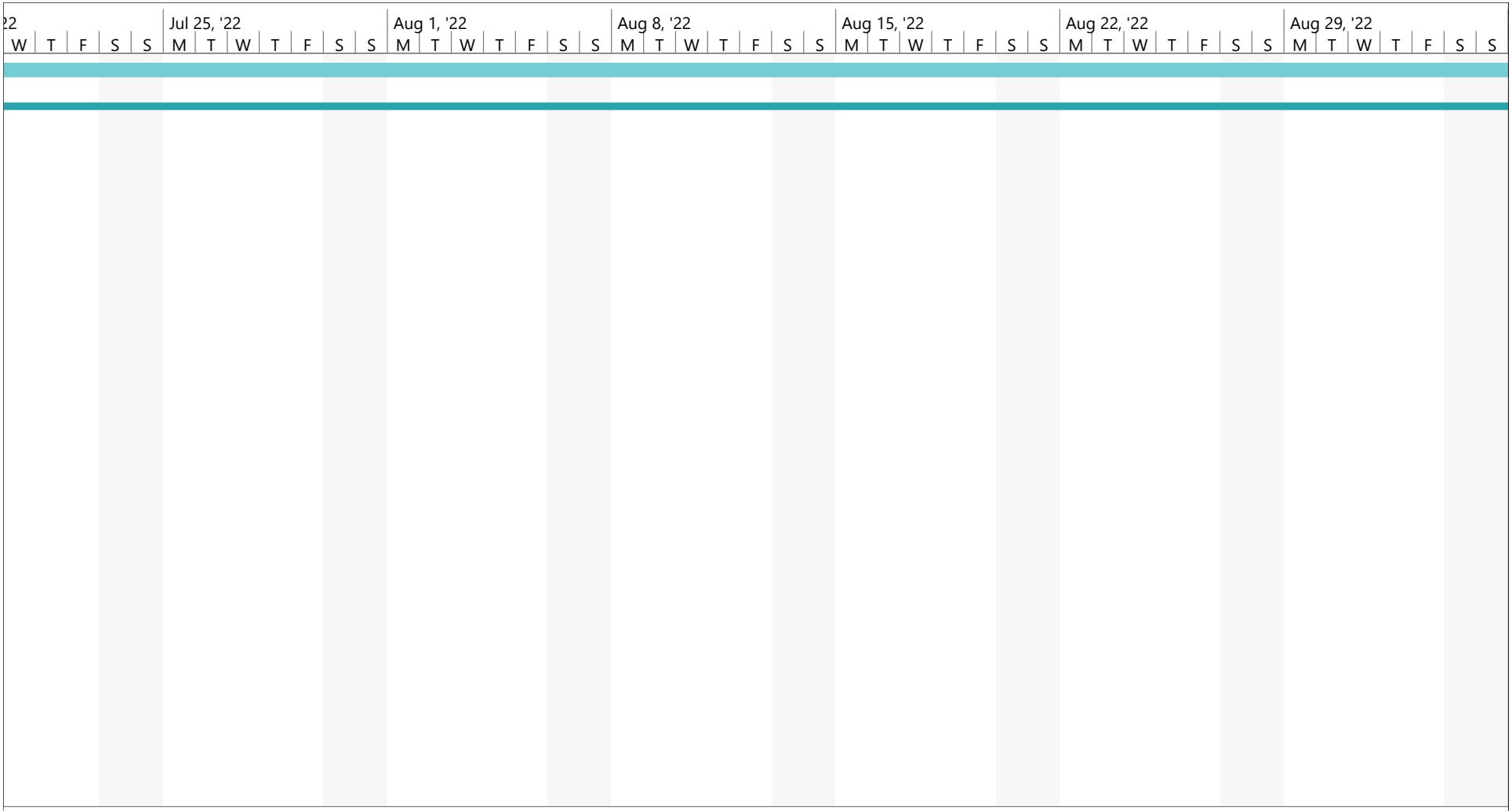

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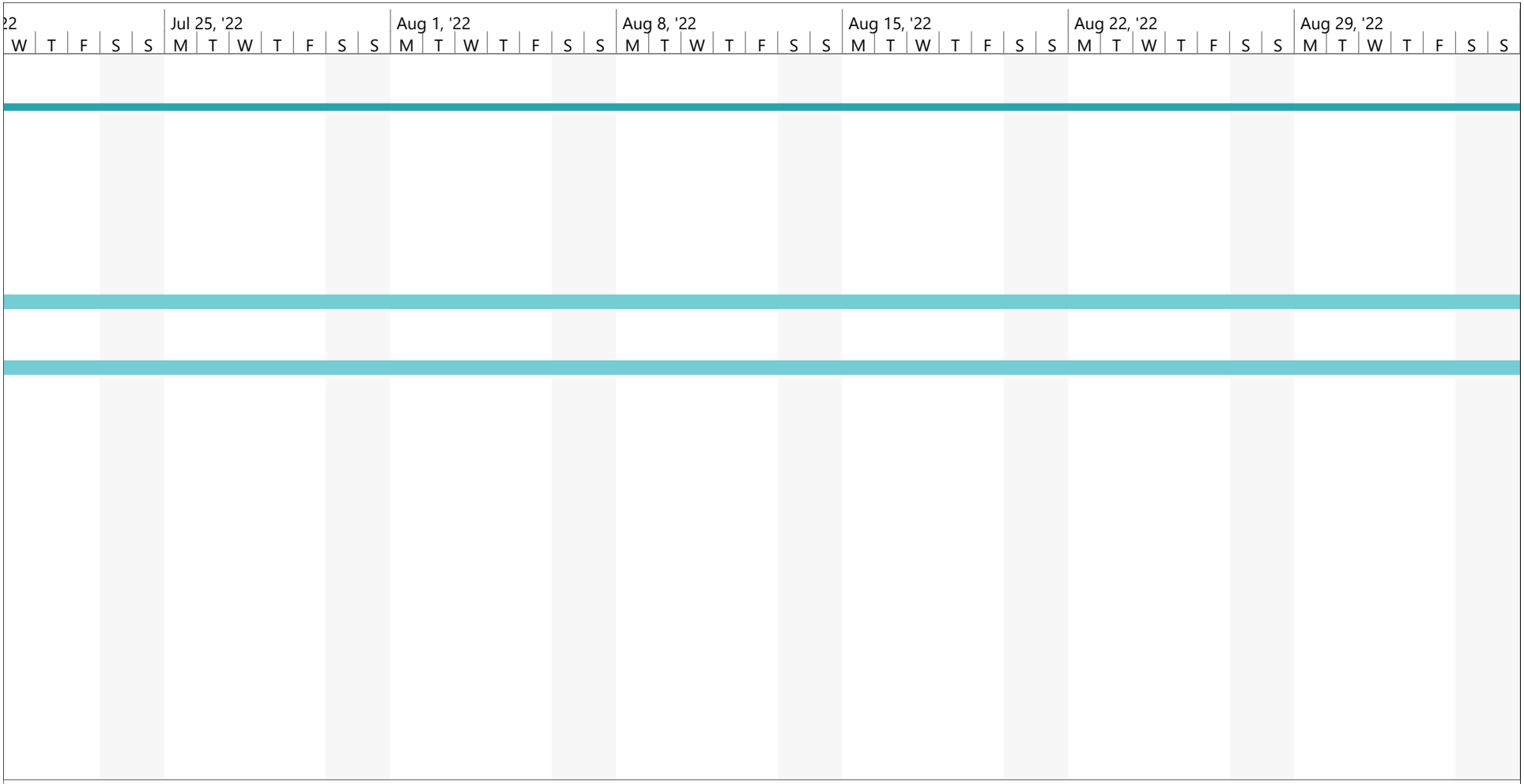

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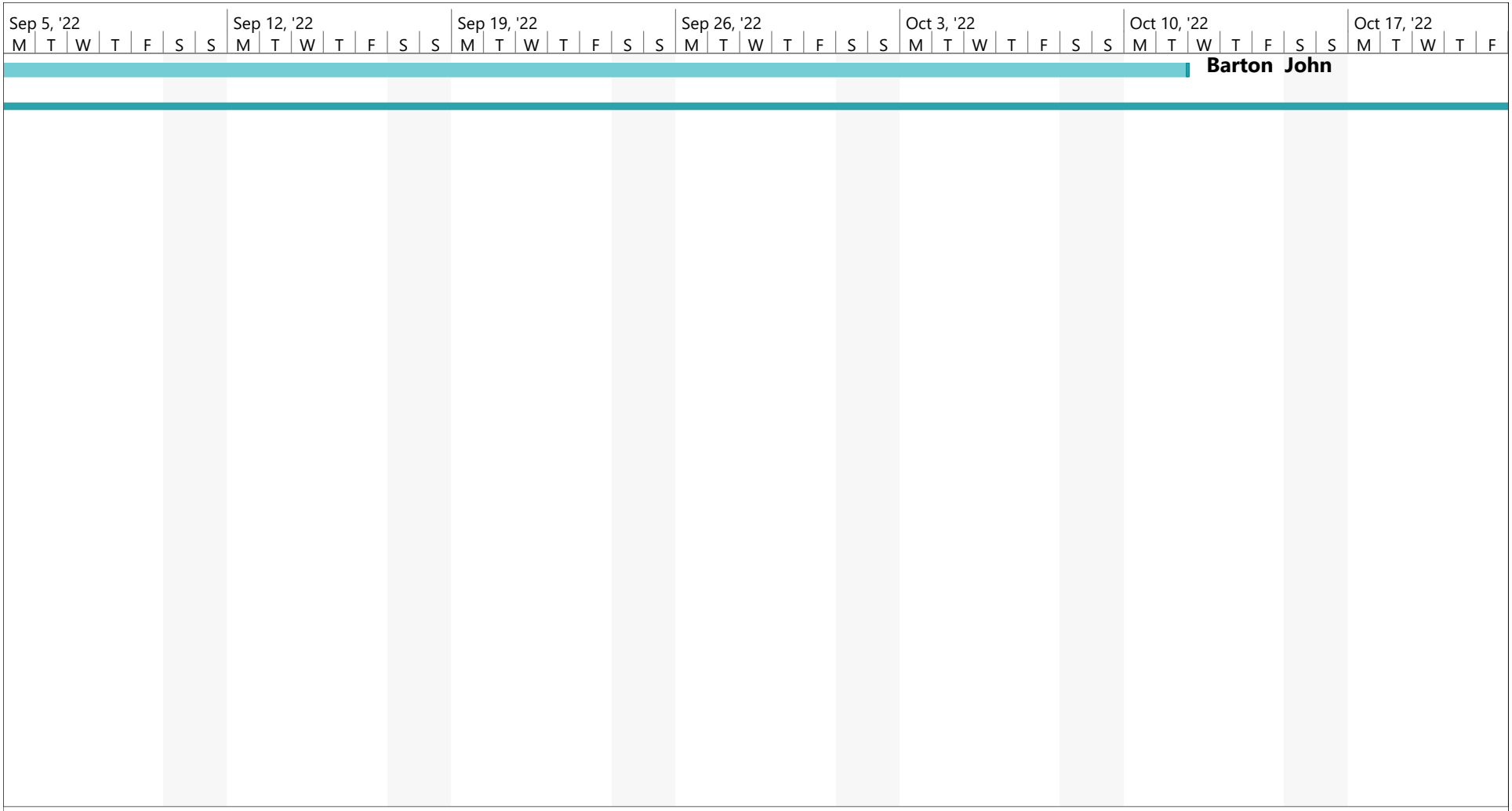

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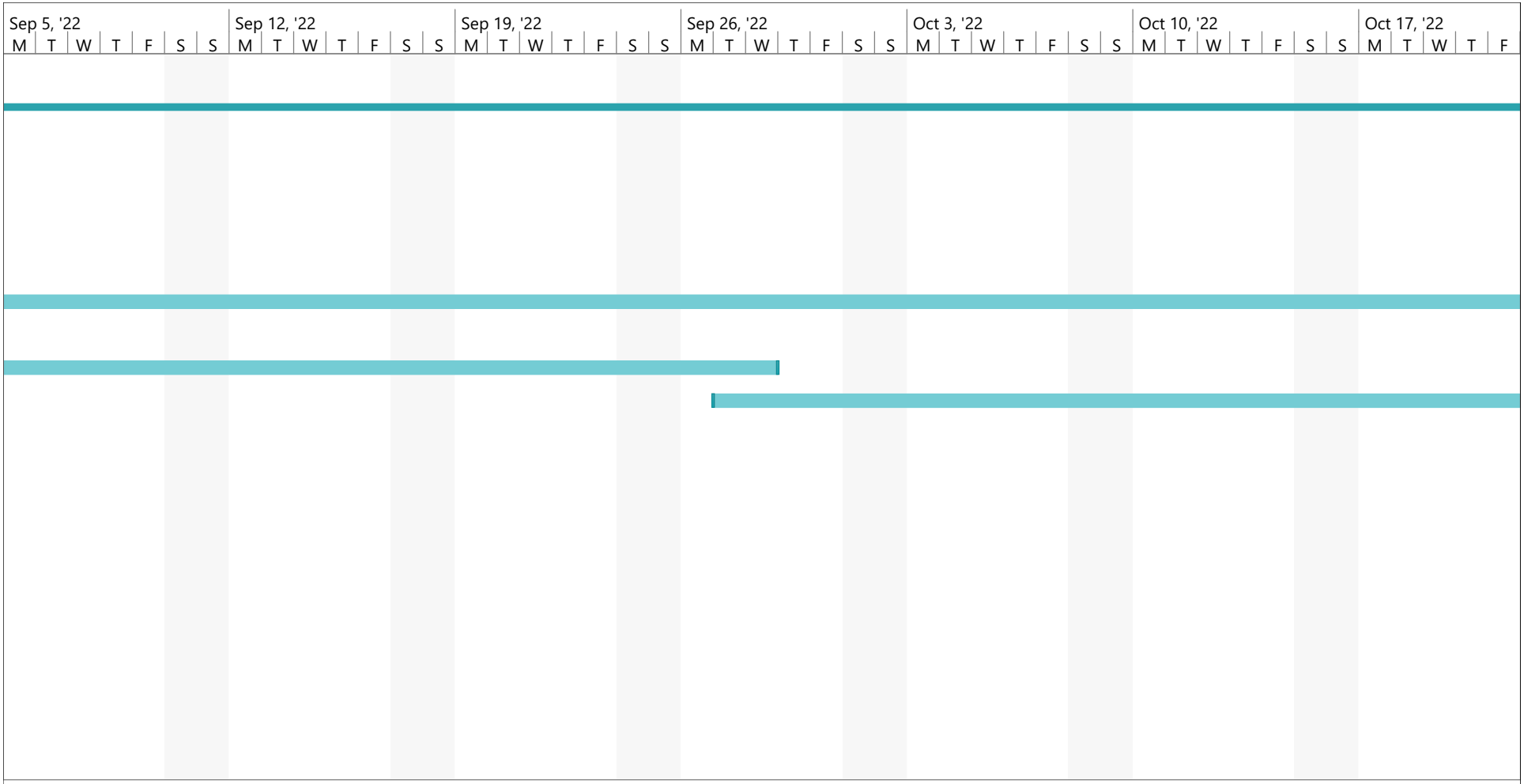

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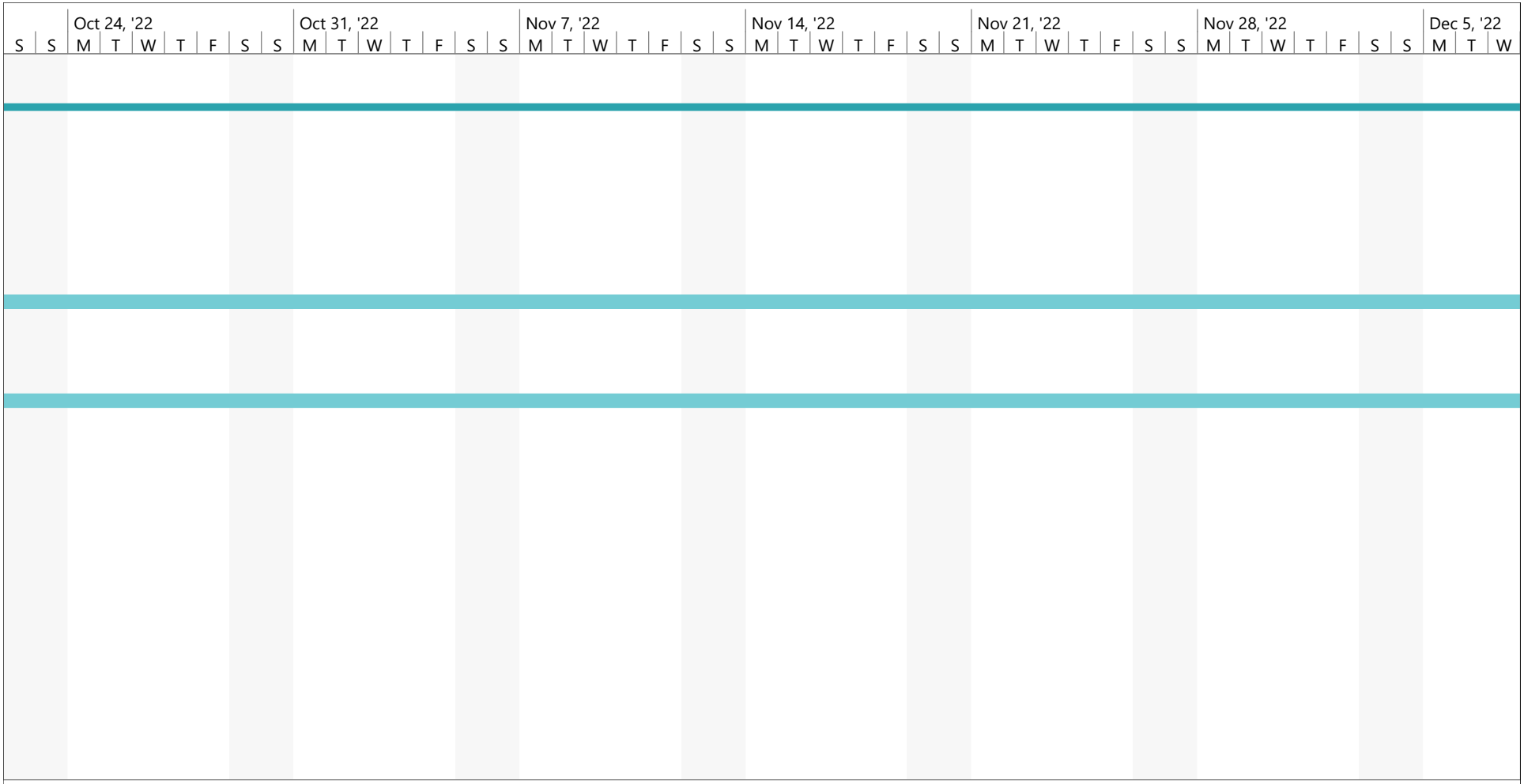

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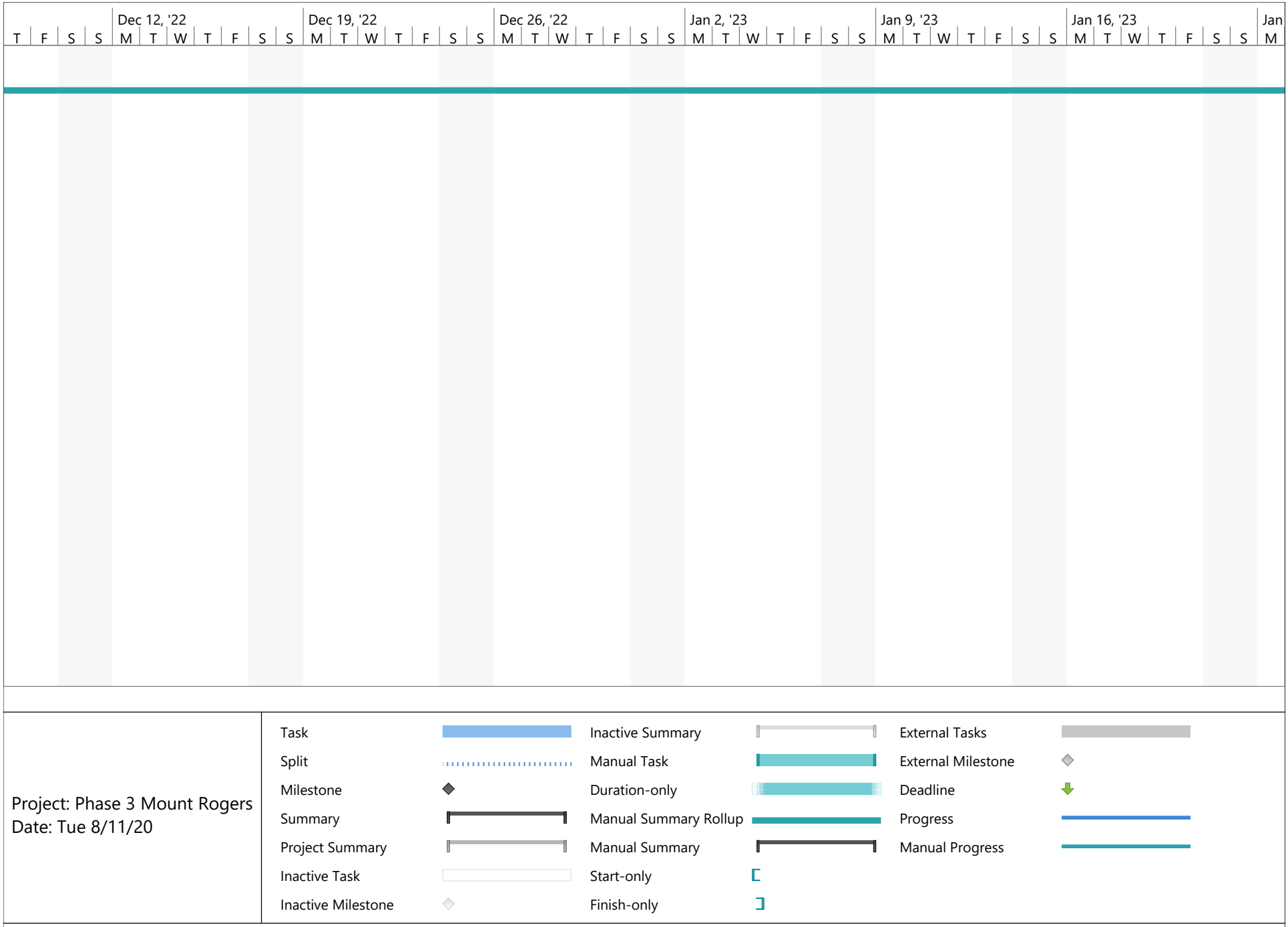

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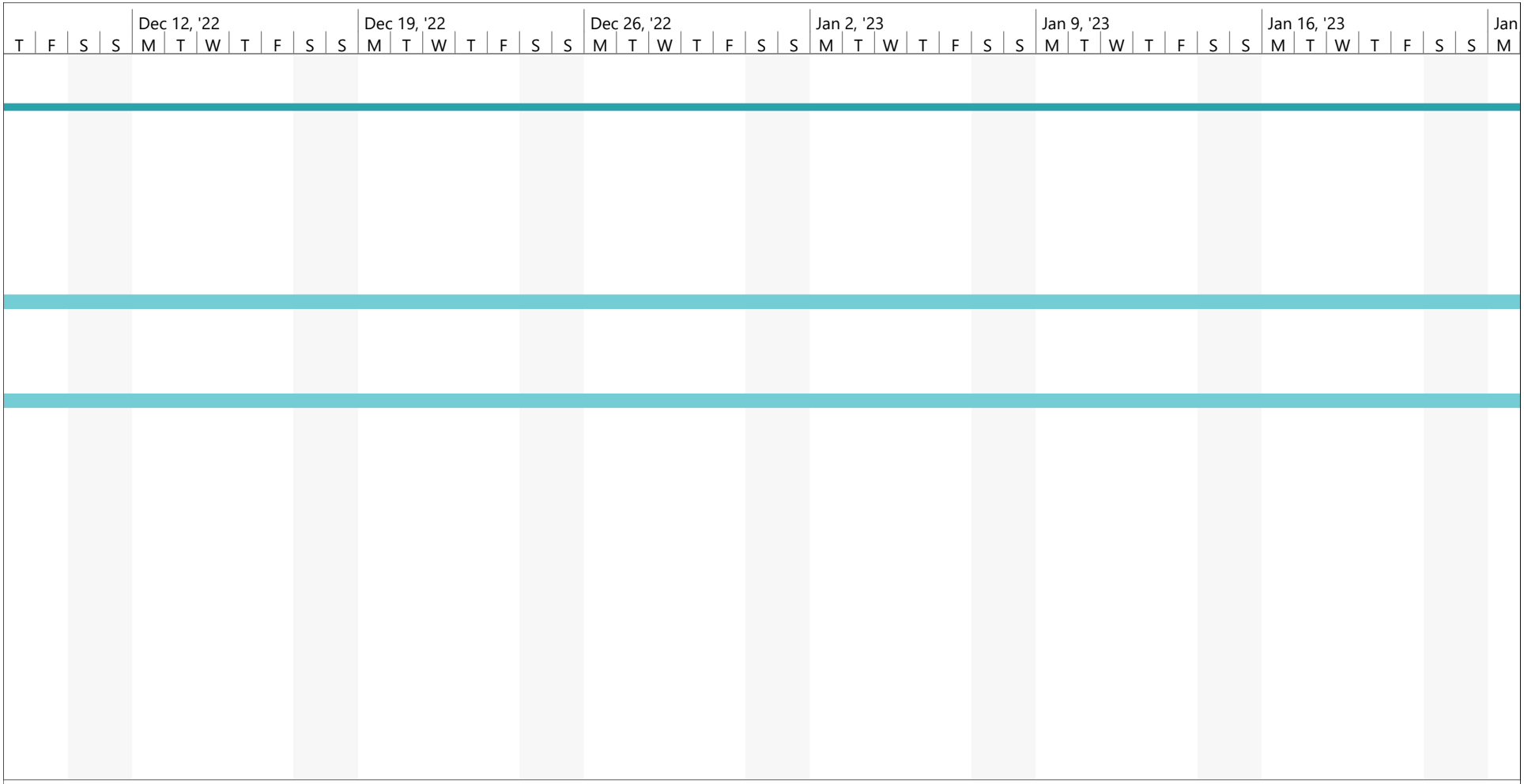

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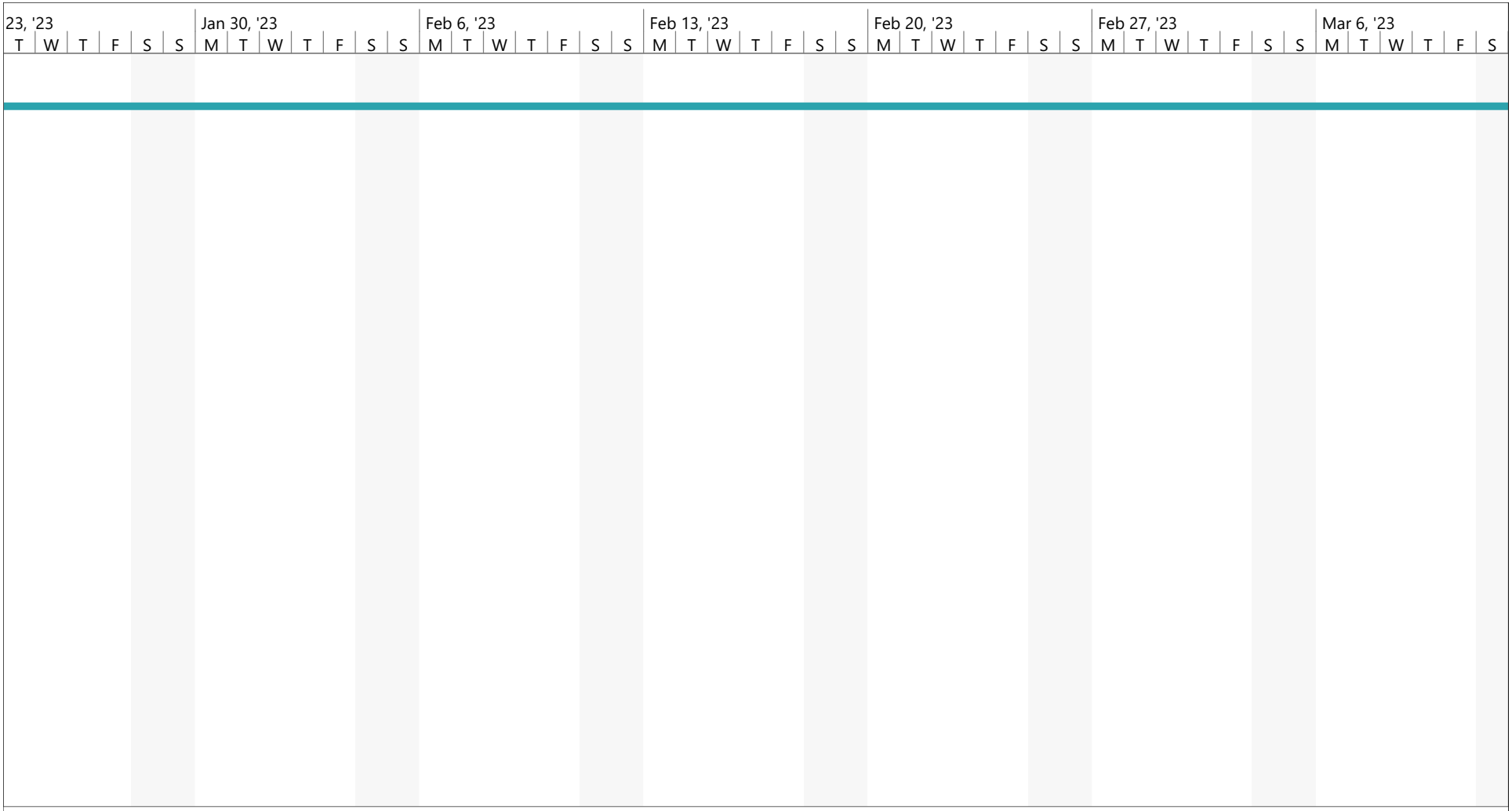

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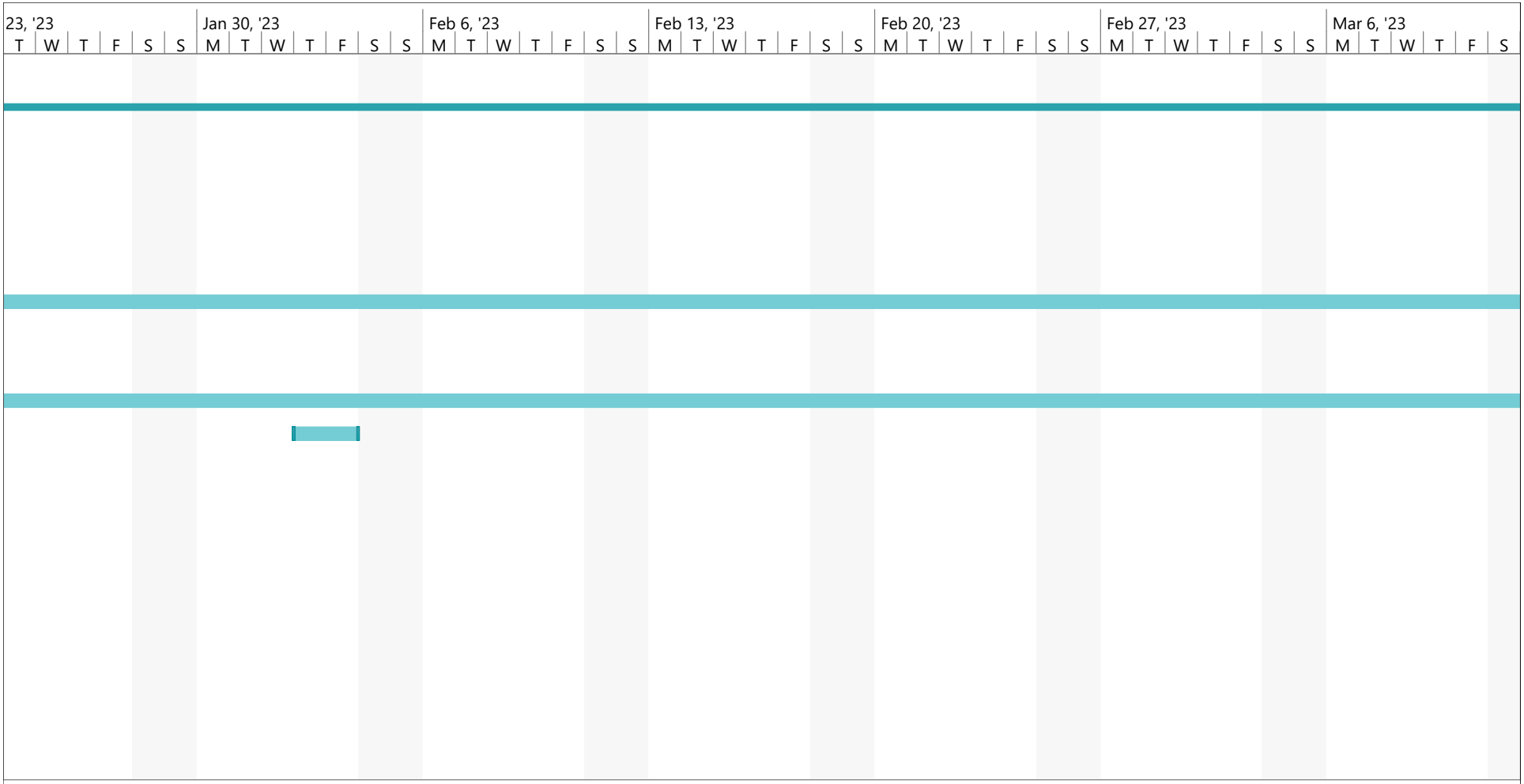

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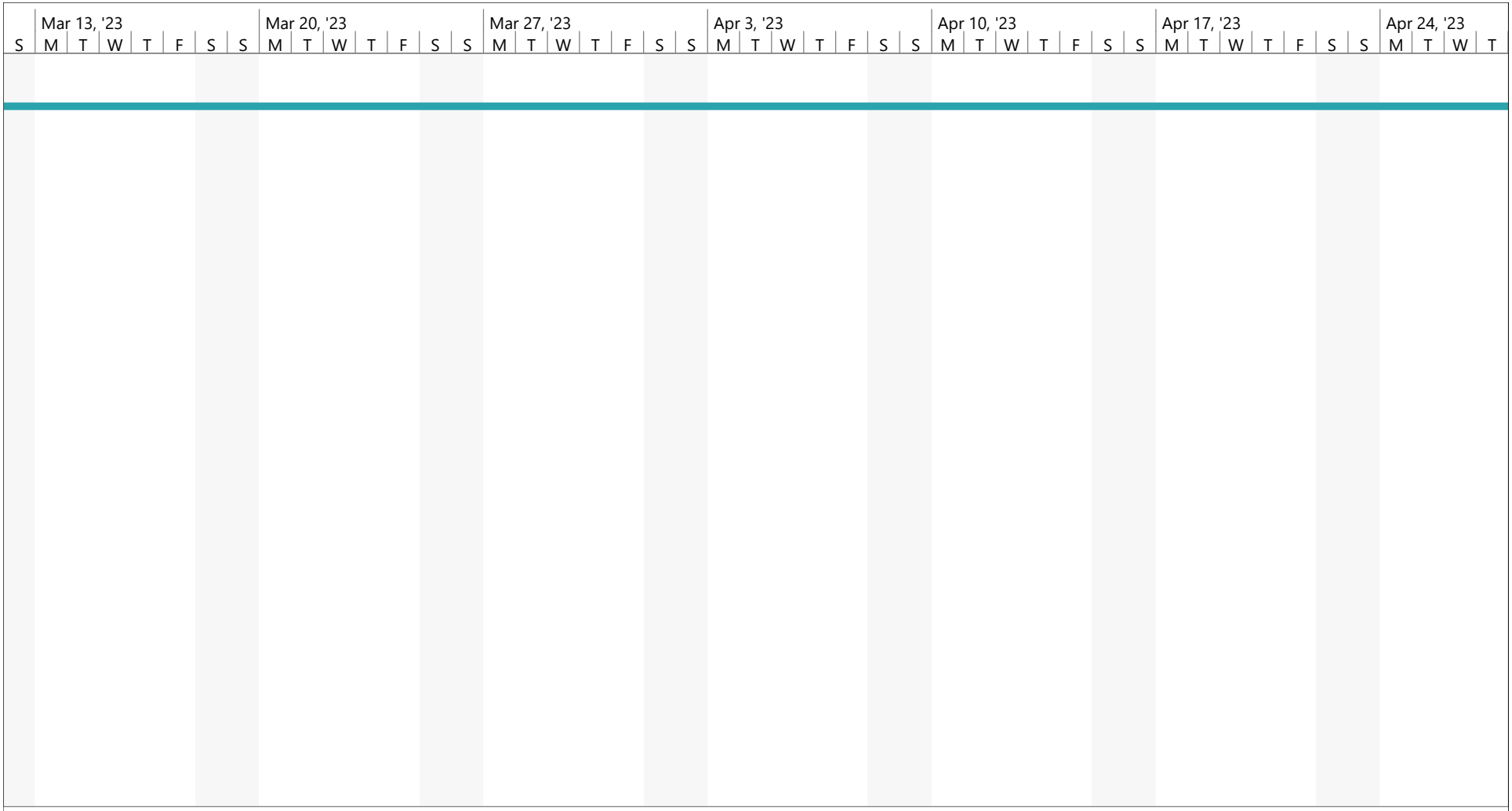

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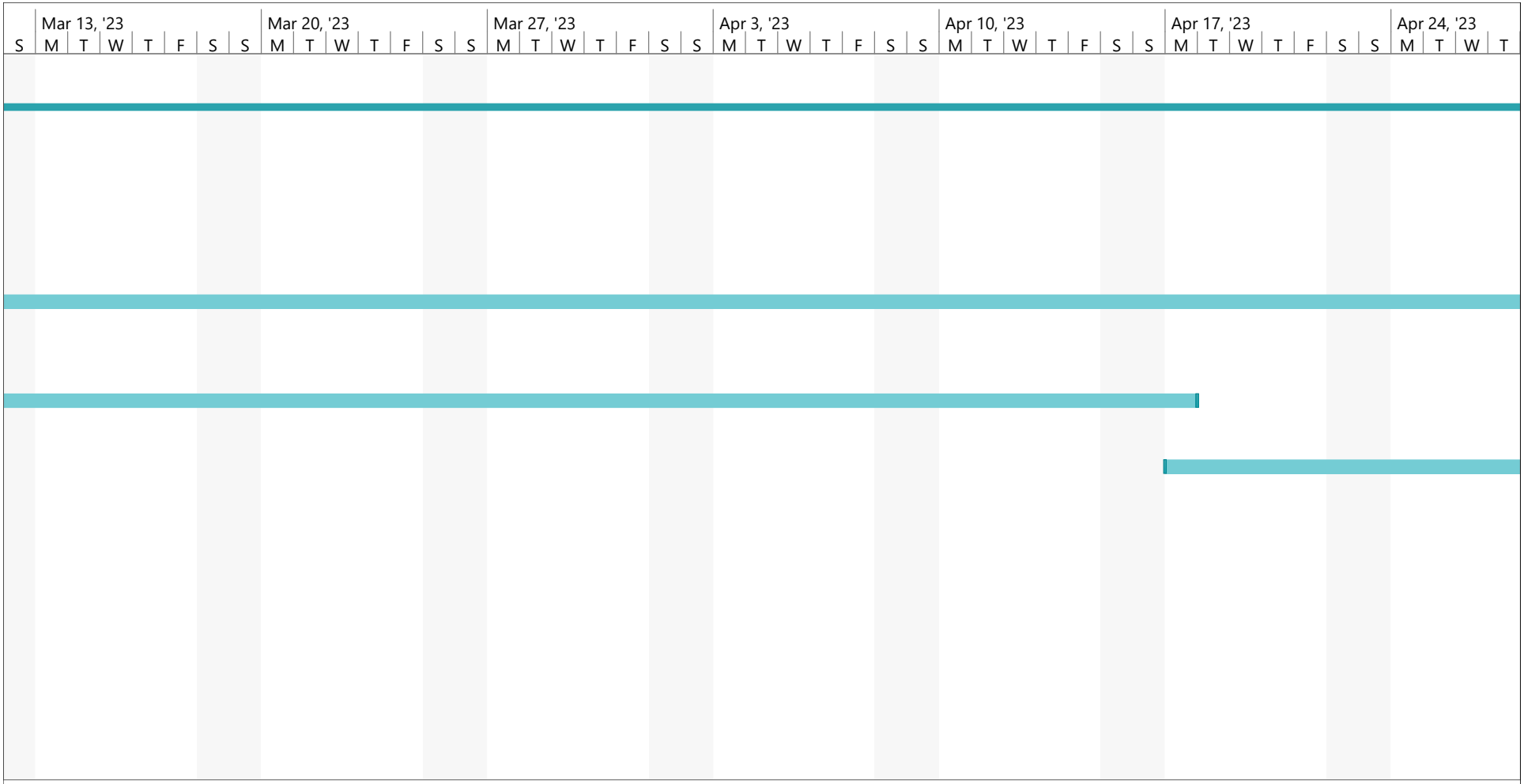

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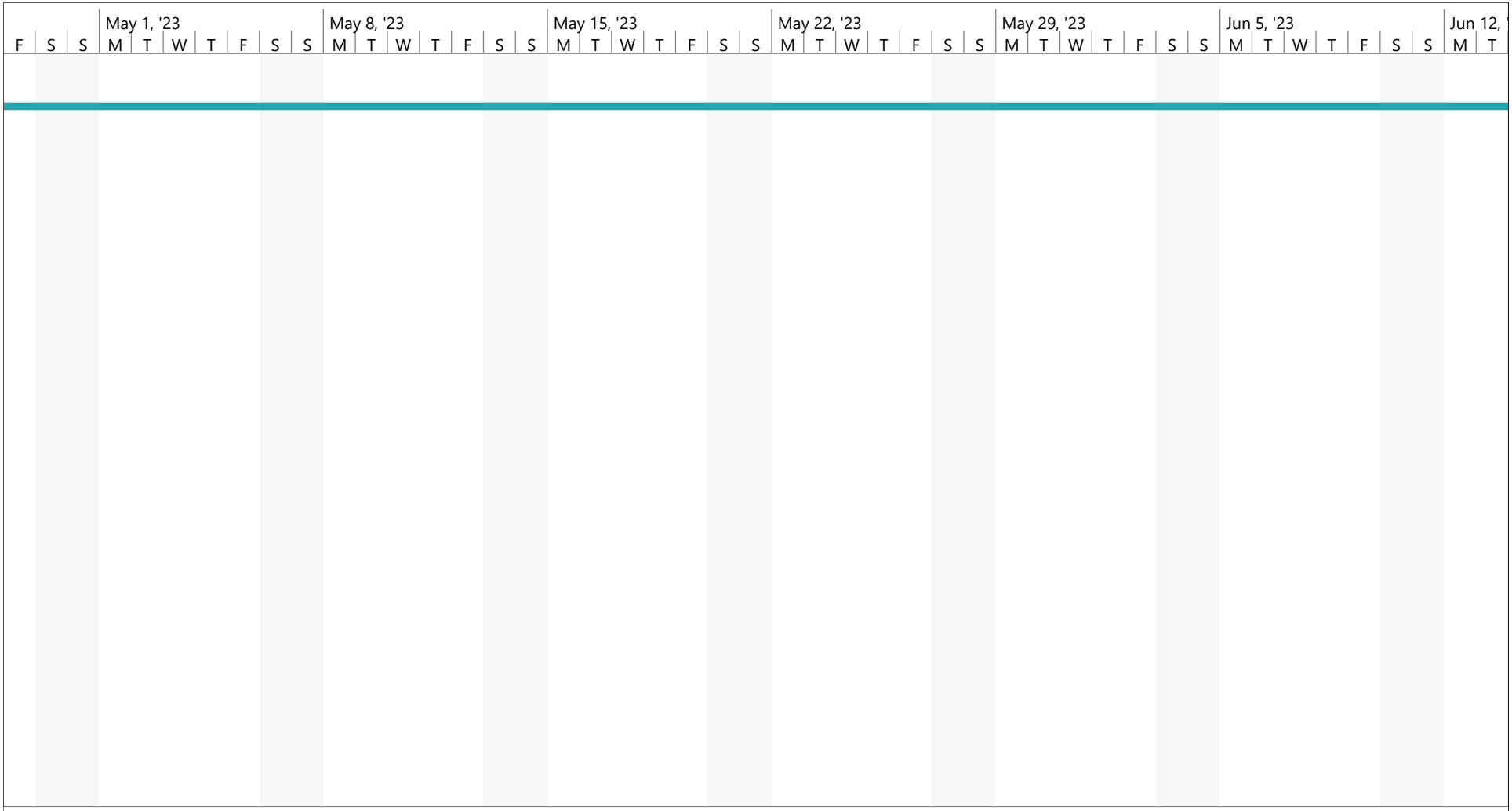

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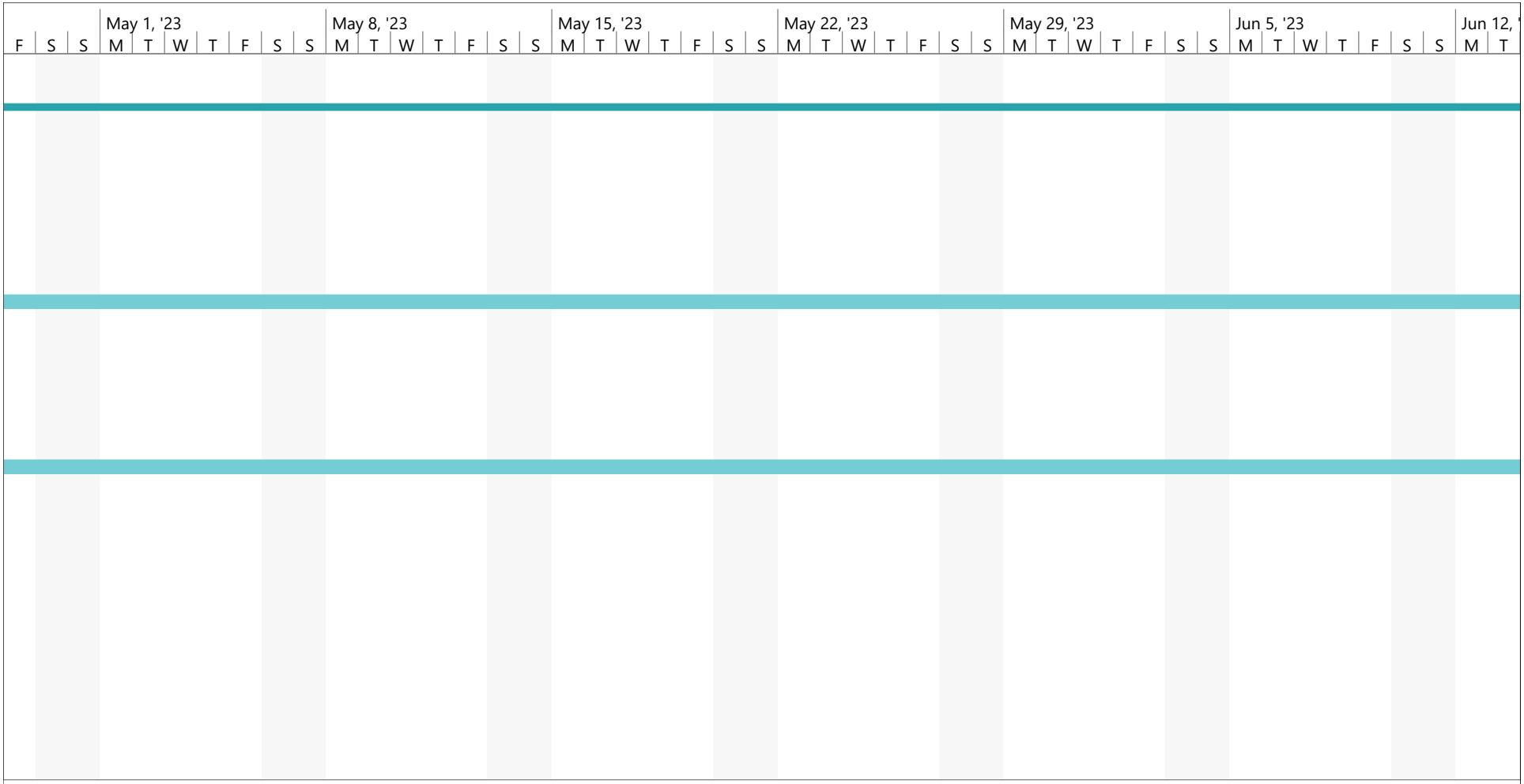

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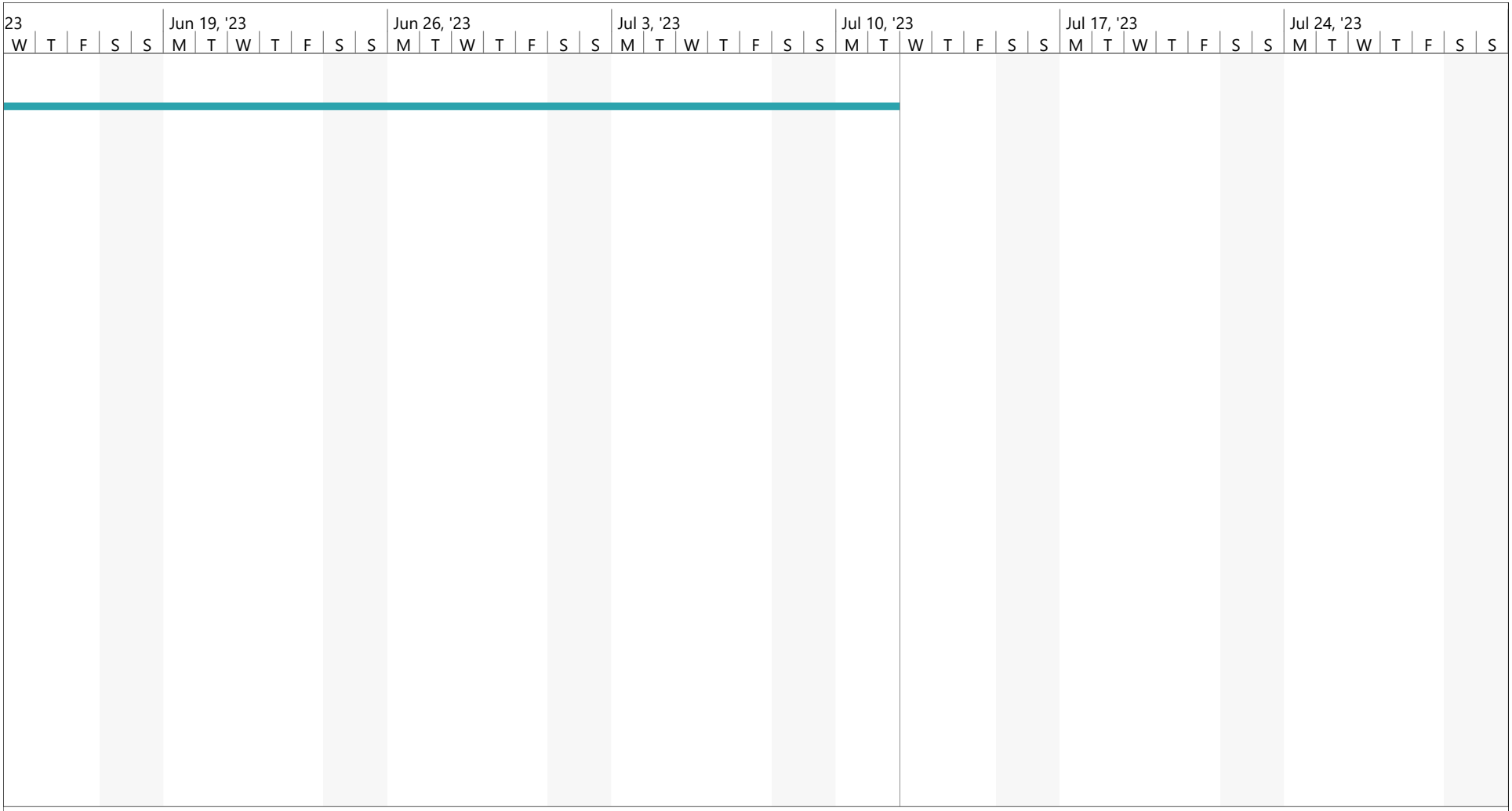

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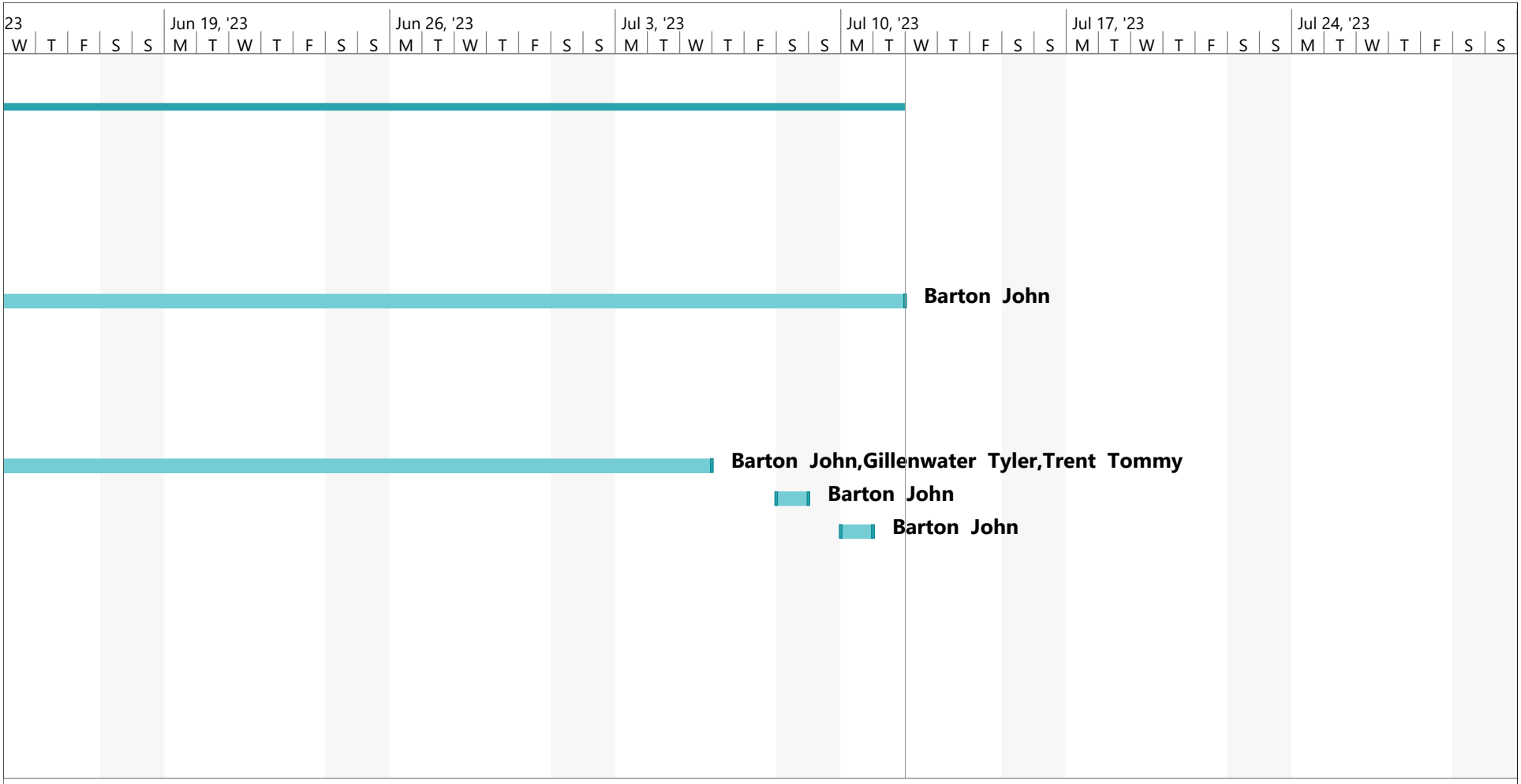

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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is made and entered into effective this August __, 2020 ("Effective Date") by and between Mount Rogers Planning District Commission, with offices located at 1021 Terrace Drive, Marion, Virginia 24354 ("Mount Rogers"), and Point Broadband Fiber Holding, LLC, with offices located at 1791 O.G. Skinner Drive, Suite A, West Point, Georgia 31833 ("Point Broadband"). Collectively Mount Rogers and Point Broadband may be referred to below as the Parties and individually referred to as Party.

WHEREAS, Mount Rogers and Point Broadband desire to cooperate with each other as co-applicants for a Virginia Telecommunication Initiative ("VATI") grant referred to herein as the Mount Rogers Broadband Expansion Project;

NOW, THEREFORE, in recognition of their mutual interests and desires, the Parties do hereby agree to the following:

INTENT: The Parties will collaborate as co-applicants on a VATI grant to support the building of fiber in the area identified on the map attached hereto as Exhibit A and incorporated by reference herein.

Upon grant award, Mount Rogers shall act as the conduit of funds for the Mount Rogers Broadband Expansion Project. Point Broadband shall build and solely own the fiber installed for, provide the labor necessary for, and operate and maintain the fiber and customer base for the Mount Rogers Broadband Expansion Project.

This MOU is not intended to create a binding contractual relationship between the Parties. The Parties agree that it would be in their best interests to negotiate a binding agreement should a grant for the Mount Rogers Broadband Expansion Project be awarded to the Parties by VATI.

EXPIRATION: This MOU expires upon the earlier occurrence of (i) two (2) years from the Effective Date above; (ii) execution by the Parties of a mutually agreed upon and fully negotiated binding agreement; (iii) an official announcement by VATI that the grant opportunity has been canceled; or (iv) the Parties do not receive a grant award from VATI.

ENTIRE AGREEMENT: The foregoing paragraphs and references contain the entire MOU between the Parties and supersede any previous understandings, commitments, or agreements (oral or written) with respect to the Mount Rogers Broadband Expansion Project referenced herein. Neither this MOU as a whole, or any single portion thereof, shall be deemed binding upon the Parties, unless and until incorporated into a binding agreement properly executed by representatives of the Parties, each acting within the scope of a properly authorized delegation of authority. Notwithstanding the foregoing, the representatives of the Parties executing this document warrant by their signatures that they will act in good faith and diligence to achieve the intent manifested herein.

The remainder of this page is intentionally blank. The next page is the signature page.

The Parties hereto have caused this MOU to be executed by their authorized representatives as set forth below.

Mount Rogers Planning District Commission

_____

By:

Name:

Title:

Date:

Point Broadband Fiber Holding, LLC

_____

By:

Name:

Title:

Date:

Exhibit A

Map

VATI FUNDING SOURCES TABLE

Please fill in the chart below with a description of the project funding source (local, federal, state, private, other), the amount from that source, the percentage of total project funding that source represents, and a description of the current status of the funds (pending, secured, etc.).

Source	Amount	%	Status
REQUESTED VATI	$ $7,080,000	35.7	Pending
[redacted]	[redacted]	[redacted]	[redacted]
POINT BROADBAND	$5,915,283	29.8	SECURED
	$		
	$		
	$		
	$		
TOTAL	**$ 19,825,033**	**100%**	

August 17, 2020

Tamarah Holmes
Associate Director
Department of Housing and Community Development
Main Street Centre
600 East Main Street
Suite 300
Richmond, VA 23219

Dear Dr. Holmes,

I am writing to affirm Point Broadband's support and commitment to the 2020 Mount Rogers Broadband Expansion Project. Point Broadband is proud to be a partner in the project application. The proposal includes VATI funding request of $7,780,000 and is to be matched by Point Broadband's $6,491,233 of private capital, [redacted]

Sincerely,

Weldon Feightner

Weldon Feightner
COO

cc Joseph Puckett

P.O. Box 429 Bristol VA 24203 15022 Lee Highway, Bristol, VA 24202
Phone 276-821-6100 FAX 276-821-6218

Point Broadband, LLC and Subsidiaries
Consolidated Balance Sheet at December 31, 2019

Assets

Current Assets	
Cash and cash equivalents	$ 6,318,831
Accounts receivable	
Customers, net of allowance of $434,067	2,284,983
Other	2,451,121
Prepayments and other	925,469
Total current assets	11,980,404
Noncurrent Assets	
Goodwill, net	8,974,465
Other intangible assets, net	6,836,652
Other assets	1,666,691
Total noncurrent assets	17,477,808
Property, Plant, and Equipment	
Telecommunications plant in service	86,897,573
Construction and premise inventory	1,495,964
	88,393,537
Less accumulated depreciation	14,069,039
Net property, plant, and equipment	74,324,498
Total assets	$ 103,782,710

The accompanying notes are an integral part of these consolidated financial statements.

Liabilities and Shareholders' Equity

Current Liabilities	
Current maturities on notes payable	$ 251,434
Current maturities on capital lease obligations	164,743
Accounts payable - trade	2,764,120
Unearned revenue	1,819,011
Customer deposits and other customer prepayments	426,794
Accrued liabilities	3,420,209
Total current liabilities	8,846,311
Noncurrent Liabilities	
Notes payable, net of current maturities	60,042,581
Less debt issuance costs	1,265,567
Capital lease obligations, net of current maturities	531,263
Unearned revenue	485,133
Total noncurrent liabilities	59,793,410
Total liabilities	68,639,721
Shareholders' Equity	
Common shares	123,480
Contributed capital - Series A, B, & C	47,333,290
Treasury stock	(397,500)
Accumulated deficit	(10,249,142)
Additional paid-in capital	(2,477,520)
Total Point Broadband, LLC shareholders' equity	34,332,608
Noncontrolling interest	810,381
Total shareholders' equity	35,142,989
Total liabilities, noncontrolling interest, and shareholders' equity	$ 103,782,710

MARK R. WARNER
VIRGINIA

United States Senate

WASHINGTON, DC 20510–4606

COMMITTEES:
FINANCE
BANKING, HOUSING, AND URBAN AFFAIRS
BUDGET
INTELLIGENCE
RULES AND ADMINISTRATION

July 27, 2020

Mr. Erik Johnston
Director
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219-2430

Dear Mr. Johnston,

I write today in support of Wythe, Washington, and Smyth County's joint grant application to the Virginia Department of Housing and Community Development's (DHCD) Virginia Telecommunications Initiative (VATI) program. I understand the proposed project plans to bring high speed broadband internet service to the underserved areas of Wythe, Smyth and Washington Counties.

To combat the effects of school closures and the challenges of virtual learning due to the COVID-19 pandemic, the Counties are requesting funding to ensure that students and their families have efficient access to the internet. The expansion of broadband internet service in rural, Southwest Virginia would also expand education, health services, business, and public safety opportunities.

I ask that you give this proposal every appropriate consideration. Should you or your staff have any questions, please contact Bianca Casper at 804-775-2314 or bianca_casper@warner.senate.gov.

Thank you for your service on behalf of my constituents.

Sincerely,

Mark R Warner

MARK R. WARNER
United States Senator

MRW/bc

☐ 180 West Main Street
Abingdon, VA 24210
Phone: (276) 628–8158

☐ 101 West Main Street
Suite 7771
Norfolk, VA 23510
Phone: (757) 441–3079

☐ 919 East Main Street
Suite 630
Richmond, VA 23219
Phone: (804) 775–2314

☐ 110 Kirk Avenue, SW
Roanoke, VA 24011
Phone: (540) 857–2676

☐ 8000 Towers Crescent Drive
Suite 200
Vienna, VA 22182
Phone: (703) 442–0670

http://warner.senate.gov

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H. MORGAN GRIFFITH
9TH DISTRICT, VIRGINIA

COMMITTEE ON
ENERGY AND COMMERCE
SUBCOMMITTEES:

ENERGY

HEALTH

OVERSIGHT AND INVESTIGATIONS

www.morgangriffith.house.gov

Congress of the United States
House of Representatives
Washington, DC 20515–4609

2202 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225–3861 PHONE
(202) 225–0076 FAX

323 WEST MAIN STREET
ABINGDON, VA 24210
(276) 525–1405 PHONE
(276) 525–1444 FAX

17 WEST MAIN STREET
CHRISTIANSBURG, VA 24073
(540) 381–5671 PHONE
(540) 381–5675 FAX

July 27, 2020

Dr. Tamarah Holmes
Associate Director
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219-2430

Dear Dr. Holmes,

I am writing to express my interest in the grant application for a joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties. submitted jointly by Wythe, Smyth, and Washington Counties in rural Southwest Virginia.

In preparing this grant application, Wythe, Smyth, and Washington Counties cited many factors contributing to the need for this funding in my congressional district. I ask that you give this application your most thoughtful and serious consideration. If there is any additional information that my office can provide, please contact Cody Mumpower at my Abingdon office at (276) 525-1405.

I would very much appreciate it if you would acknowledge receipt of this letter and keep me apprised of your action regarding this application when review is complete. You should respond to Wythe, Smyth, and Washington Counties in care of my Abingdon office at (276) 525-1405 by phone or by mail to 323 W. Main Street, Abingdon, Virginia 24210.

Thank you for your time and attention to this matter. I look forward to hearing from you. I remain

Sincerely yours,

H. MORGAN GRIFFITH
Member of Congress

PRINTED ON RECYCLED PAPER

SENATE OF VIRGINIA

TODD E. PILLION
40TH SENATORIAL DISTRICT
ALL OF GRAYSON, LEE, SCOTT, AND WASHINGTON COUNTIES; ALL OF THE CITY OF BRISTOL; AND PART OF SMYTH, WISE, AND WYTHE COUNTIES

851 FRENCH MOORE JR. BOULEVARD
ABINGDON, VIRGINIA 24210
(276) 220-1209

COMMITTEE ASSIGNMENTS:
AGRICULTURE, CONSERVATION AND NATURAL RESOURCES
GENERAL LAWS AND TECHNOLOGY
LOCAL GOVERNMENT
TRANSPORTATION

July 23, 2020

Dr. Tamarah Holmes
Director, Office of Broadband
Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219

Dear Dr. Holmes:

Broadband deployment is more important than ever before. As a supporter of education, infrastructure and business, I wish to offer my support for the proposed joint project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased at the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while minimizing the cost per capita. As a member of the General Assembly, I have advocated for additional funding provided through VATI for the benefit of communities like those to be served through this project proposal.

The expansion of broadband internet service in these areas will expand educational, health services (via telehealth), business, and public safety opportunities to families who need these services most in a moment in time when the importance of such utilities has never been greater realized.

I appreciate your consideration of this request. Please let me know if I may be of further assistance.

Sincerely,

Todd Pillion
Senator, 40th District

COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

ISRAEL O'QUINN
POST OFFICE BOX 16325
BRISTOL, VIRGINIA 24209

COMMITTEE ASSIGNMENTS:
PRIVILEGES AND ELECTIONS
LABOR AND COMMERCE

July 27, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state-of-the-art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

During my time in the House of Delegates, I have worked to find creative solutions to the lack of broadband in rural Virginia, but especially in Southwest Virginia. Anytime we can connect another home, another neighborhood, or another community is a big win for our region. Commerce, learning, medicine, and almost all other facets of life, are now done online and the gaps in broadband coverage in our region keeps our citizens from being able to participate in these basic functions. I hope that this project will be a huge step in the right direction on expanding broadband in Southwest Virginia.

Kind regards,

Delegate Israel O'Quinn
Fifth District
Virginia House of Delegates

RICHMOND: (804) 698-1005 • EMAIL: DELIOQUINN@HOUSE.VIRGINIA.GOV

COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

JEFFREY L. CAMPBELL
POST OFFICE BOX 986
MARION, VIRGINIA 24354

SIXTH DISTRICT

COMMITTEE ASSIGNMENTS:
COURTS OF JUSTICE
COUNTIES, CITIES AND TOWNS
HEALTH, WELFARE AND INSTITUTIONS
SCIENCE AND TECHNOLOGY

August 10, 2020

Dr. Tamarah Holmes
Associate Director
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219-2430

Re: Joint Broadband Project

Dear Dr. Holmes:

Please accept this letter of strong support for the joint broadband project being submitted by Wythe, Smyth and Washington Counties. The build-out and development of high speed broadband to unserved portions of Southwest Virginia is a project of the highest importance, calculated to provide significant economic and educational opportunity, and would otherwise be of utmost significance to the Commonwealth of Virginia as a whole from both a public safety and public health standpoint.

I would ask that you please give favorable consideration to the project and please keep me apprised of its status as it winds its way through the process.

Very truly yours,

Del. Jeffrey L. Campbell

JLC/tp

LOCAL HEALTH DEPARTMENTS
SERVING THE PEOPLE OF

Bland 276-688-3642
Bristol 276-642-7335
Carroll 276-730-3180
Galax 276-236-6127
Grayson 276-773-2961
Smyth 276-781-7460
Washington 276-676-5604
Wythe 276-228-5507

Karen Shelton MD
District Director
Phone: 276-781-7450
Fax: 276-781-7455

Email
karen.shelton@vdh.virginia.gov

COMMONWEALTH of VIRGINIA
Virginia Department of Health
Mount Rogers Health District
201 Francis Marion Lane
Marion, VA 24354

July 27, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

Dear Dr. Holmes:

I am writing on behalf of the Mount Rogers Health District in support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion, will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously underserved. The project will also allow Smyth County to utilize a previously constructed fiber route connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access for homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

This project is an innovative regional collaboration that will help the Commonwealth to achieve those VATI goals of strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure.

The COVID-19 pandemic and subsequent school closures have thrown into sharp relief what we have known for some time: access to high-speed internet is a matter of health equity. Thousands of work hours have been spent in Southwest Virginia since March strategizing about the best way to ensure internet access in the fall for students. While it is important work we are happy to do, there is no shortage of COVID-19 response work to be

LOCAL HEALTH DEPARTMENTS
SERVING THE PEOPLE OF

Bland 276-688-3642
Bristol 276-642-7335
Carroll 276-730-3180
Galax 276-236-6127
Grayson 276-773-2961
Smyth 276-781-7460
Washington 276-676-5604
Wythe 276-228-5507

Karen Shelton MD
District Director
Phone: 276-781-7450
Fax: 276-781-7455

Email
karen.shelton@vdh.virginia.gov

COMMONWEALTH of VIRGINIA
Virginia Department of Health
Mount Rogers Health District
201 Francis Marion Lane
Marion, VA 24354

done, and the time spent on strategizing about access to basic utilities could have been more wisely spent in other areas if this access already existed. The Mount Rogers Broadband Expansion project will mean that our communities are more equitably served in the future, and allow creative thinking and community collaboration to transition to creating new opportunities within the region. We look forward to the opportunities this project will present for vulnerable and underserved communities.

Sincerely,

Karen Shelton MD
Director Mount Rogers Health District

COUNTY OF WASHINGTON, VIRGINIA
COUNTY ADMINISTRATION BUILDING
1 GOVERNMENT CENTER PLACE, SUITE A
ABINGDON, VIRGINIA 24210

COUNTY ADMINISTRATOR
JASON N. BERRY

OFFICE OF COUNTY ADMINISTRATOR

August 14, 2020

Dr. Tamarah Holmes
Director, Office of Broadband
Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219

RE: Letter of Support- Virginia Telecommunications Initiative (VATI) 2020- Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes:

I am writing to express the support of the Mount Rogers Planning District Commission's funding request to the Virginia Telecommunication Initiative (VATI). Washington County, VA recognizes the importance of high-speed broadband internet infrastructure investments which contribute to enhanced public safety, educational success, long-term business and employment growth and overall community vitality. As our community faces new challenges presented by a post-COVID pandemic society, existing internet access needs of underserved and unserved locations within our community are further amplified. Public safety, residential internet access for households with school-age children, and business telecommunication connectivity drive our needs and identify geographies for coverage prioritization.

A successful VATI award provides an impactful investment which supports our overall goals for universal coverage, and will greatly benefit 2,745 passings which include residents, community anchor institutions, businesses, and recreational assets within the proposed Washington County project service area. We are especially pleased to join with our neighbors in Smyth and Wythe counties to support a larger endeavor to serve over 6,000 passings and recognize that a project of this magnitude requires full regional cooperation and participation.

On behalf of Washington County, VA, we strongly urge your thoughtful review and consideration of this funding request. I am happy to address any questions related to our participation in this proposal and look forward to continued dialogue on efforts to promote telecommunications infrastructure development across our region and the Commonwealth.

Sincerely,

Jason N. Berry
County Administrator
Washington County, VA

276-525-1300-TELEPHONE 272-525-1309-TELEFACSIMILE jberry@washcova.com-E-MAIL
WWW.WASHCOVA.COM

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

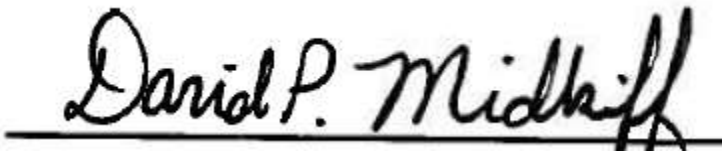
Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

Dr. Holmes,

As a Wythe County resident, I wish to offer my support for the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita.

The expansion of broadband internet service in these areas will expand telehealth options for our elderly, educational opportunities for our students and will help local businesses. It is for these reasons that I wish to lend our support to the program.
Sincerely,



NAME

08/10/2020
DATE

Wythe County Planning Commission Member
Speedwell District

Smyth County, Virginia
121 Bagley Circle, Suite 100
Marion, VA 24354

Park District
Kris Ratcliff

Rye Valley District
Lori Deel

Saltville District
Roscoe Call

North Fork District
Phil Stevenson

Atkins District
Charles Atkins

Chilhowie District
Mike Sturgill

Royal Oak District
Judy Wyant

County Administrator
Shawn Utt

Assistant County Administrator
Alicia Richardson

July 24, 2020

Dr. Tamarah Holmes
Director, Office of Broadband
Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219

Dear Dr. Holmes:

Broadband deployment is more important than ever before. As a supporter of education, infrastructure and business, myself and the Smyth County Board of Supervisors wish to offer our support for the proposed joint project to bring high speed broadband internet service to the under and unserved areas of Smyth, Wythe and Washington Counties.

The high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while minimizing the cost per capita is noteworthy and commendable. As Chair of the Smyth County Board of Supervisors, I whole-heartedly support the potential for our communities to be served through this project proposal. In addition to this letter of support, the Smyth County Board of Supervisors also passed the attached resolution in support of broadband expansion efforts.

The expansion of broadband internet service in these areas will expand educational, health services (via telehealth), business, and public safety opportunities to families who need these services most in a moment in time when the importance of such utilities has never been greater realized.

I appreciate your consideration of this request. Please let me know if I may be of further assistance.

Sincerely,

Judy Wyant

Judy Wyant
Chair, Smyth County Board of Supervisors

August 5, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

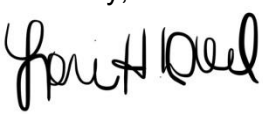
I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

As a member of the Smyth County Board of Supervisors, representing the Rye Valley District, it is the utmost importance to me to ensure the citizens in my district have access to broadband. There are many children and parents in the district who, currently, do not have access to the internet, yet they are being asked to learn from home and work from home. This creates a challenge when they do not have an option for internet access.

In addition, several small businesses located throughout the district rely heavily upon access to internet to ensure the success of their businesses. One business, in particular, is a $5 million business, employing over 30 individuals. When asked what the number one need is for their business, they always tell me “access to internet”. Our local economy depends on businesses just like this one. We need to do all we can to support them. We appreciate DHCD’s efforts on this project, and it is my sincere hope we see it comes to fruition in the very near future. Please contact me via any of the mechanisms below if I can answer any questions or be of assistance.

Sincerely,



Lori H. Deel
Smyth County Board of Supervisors, Rye Valley District
Cell: 276-780-2702 Email: Ldeel@smythcounty.org

GAVIN BLEVINS, Town Manager
LINDA ROUSE, Treasurer
TUESDAY POPE, Clerk

VISITDAMASCUS.ORG
P.O. Box 576
208 West Laurel Ave.
Damascus, VA 24236
(P) 276.475.3831

DAMASCUS
CROSSING PATHS

Mayor **JACK MCCRADY**
Vice-Mayor **TIM WILLIAMS**

TOWN COUNCIL:
Vicky Van de Vuurst
Tommy Hayes
Susan Seymore
Sean Albro
Mitchel Greer

17 August 2020

Dr. Tamarah Holmes
Associate Director
Virginia Department of Housing & Community Development
600 East Main Street, Suite 300
Richmond, VA 23219-2430

Letter of support – Joint Broadband Application for Wythe, Smyth, Washington Counties

Dr. Holmes,

Please accept this letter of support for the joint broadband project application being submitted by Wythe, Smyth, and Washington counties. The build-out and development of high speed broadband to unserved portions of Southwest Virginia is a project of the utmost priority, now more than ever before, poised to provide significant economic and educational functionality. The broadband needs of these counties in Southwest Virginia are strongly ties to the public health and welfare and are of the highest priority.

Though a portion of the Town of Damascus is served by highspeed internet, vast portions of the surrounding area does not have access to fast or reliable internet, limiting business functionality and residential accessibility for expanded land use potentiality. Now, access to high speed internet can be the difference between getting or not getting a K-12 education. The Town has plans to provide essential hot spots and wireless infrastructure within its jurisdiction, but must rely on the availability of available broadband to offer even the most essential services.

I appreciate your consideration of this request and the value of my support toward this request – please let me know if the town can provide you with any additional support.

Always a pleasure,

Gavin N. Blevins
Town Manager

VIRGINIA'S INDUSTRIAL ADVANCEMENT ALLIANCE

– Promoting the i81–i77 Crossroads –

www.i81-i77crossroads.com

July 31, 2020

Tamarah Holmes, Ph.D.
Director, Office of Broadband
Virginia Department of Housing and Community Development
600 E. Main Street, Suite 300
Richmond, VA 23219

Re: Support of Wythe-Smyth-Washington broadband project

Dear Dr. Holmes:

For the previous 10 years, Southwest Virginia stakeholders have continued to discuss the importance of ubiquitous and quality high-speed internet. During the initial years of development, most resources were focused on areas of high demand or toward business and industrial development. In several smaller projects we have experienced moderate success in inducing investment that extended internet service into areas that otherwise would not be connected.

In the present, while under the strain of a pandemic and the societal transformations it has induced, our vulnerabilities have been exposed. The inability of many communities, households, and children to compete and thrive in our modern society has been revealed. How can we attract the modern remote worker, improve standards of living, or educate our future workforce without modern connectivity? The answer is that we cannot.

There is no better area for VATI investment than in the I81-I77 crossroads region of Virginia. This is a region that connects the more developed parts of the commonwealth to the most underdeveloped. With all other critical infrastructure in place, by providing high speed internet into virtually every area we will unlock potential for future regional development in SWVA. The VATI funds represent an opportunity to address our most significant weakness. I write in enthusiastic support of the joint application of Wythe, Smyth, and Washington Counties for VATI funding.

Sincerely,

Josh Lewis
Executive Director

JOINT INDUSTRIAL DEVELOPMENT AUTHORITY
Wythe County, Virginia

August 7, 2020

Tamarah Holmes, Ph.D.
Director, Office of Broadband
Virginia Department of Housing and Community Development
600 E. Main Street, Suite 300
Richmond, VA 23219

Re: Support of Wythe-Smyth-Washington broadband project

Dear Dr. Holmes:

I write in enthusiastic support of the joint application of Wythe, Smyth, and Bland Counties for VATI funding for a project that would bring broadband into underserved areas of our communities.

Our organization is charged with creating jobs, diversifying our economic base, and generally increasing the quality of life for our citizens through economic development. This project epitomizes work we should support.

Internet should be considered a utility in today's world, a true necessity for fuller participation in the global marketplace.

This project targets a critically underserved area and one that is replete with natural beauty. Enticing others to locate here requires affordable, robust broadband. This project would support that goal, as well.

In sum, economic development and full participation in our society means having quality internet access. This project would help us take a major step in that direction. The cross-border collaboration indicates that government can do outstanding work when working together.

Please contact me if I can provide any additional information.

All the best,

David Manley
Executive Director

276/223-3370 (office)
276/620-6209 (mobile)

Smyth County
Economic Development Authority
121 Bagley Circle, Suite 100
Marion, VA 24354

Park District — Julius Winebarger
Rye Valley District — Montie Fleshman (V. Chair)
Saltville District — Amy McVey
North Fork District — John McLean (Chair)
Atkins District — Marvin Craig
Chilhowie District — Chris Brewer
Royal Oak District — Karen Copenhaver

July 24, 2020

Dr. Tamarah Holmes
Director, Office of Broadband
Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219

Dear Dr. Holmes:

Broadband deployment is more important than ever before. As a supporter of education, infrastructure and business, myself and the Smyth County Economic Development Authority wishes to offer our support for the proposed joint project to bring high speed broadband internet service to the under and unserved areas of Smyth, Wythe and Washington Counties.

Having broadband access is essential to our County's success and continued economic growth. In order to attract new capital investments; corporations, small businesses, and entrepreneurs alike, the availability of broadband services is a must. Concurrently, this project will offer our existing businesses in these areas with affordable, reliable broadband that is imperative to their sustainability.

The "digital-divide" has become more and more apparent as our Counties navigate through the unprecedented COVID-19 pandemic. The need for reliable, high-speed internet is not something that can be ignored. Although rural communities are behind the curve, regional projects like this, will give our areas the attention necessary to keep momentum and broadband expansion process at top of mind with Legislators.

The expansion of broadband internet service in these areas will expand educational, health services (via telehealth), business, and public safety opportunities to families who need these services most in a moment in time when the importance of such utilities has never been greater realized.

I appreciate your consideration of this request. Please let me know if I may be of further assistance.

Sincerely,

John C. McLean, Jr.
Chairman

INDUSTRIAL DEVELOPMENT AUTHORITY
OF WASHINGTON COUNTY
1 GOVERNMENT CENTER PLACE, SUITE D
ABINGDON, VIRGINIA 24210

(276) 628-8141
FAX (276) 628-3984

August 14, 2020

Ms. Whitney Czelusniak
Deputy County Administrator/Director
Economic Development & Community Relations
County of Washington, VA
1 Government Center Place, Suite A
Abingdon, VA 24210

RE: Letter of Support for Application to the Virginia Telecommunications Initiative (VATI)

Dear Ms. Czelusniak:

I am writing to express the support of the regional funding request to the Virginia Telecommunication Initiative (VATI). The Industrial Development Authority of Washington County, VA recognizes the importance of infrastructure investments which contribute to long-term business growth and overall community vitality. We are proud of our past efforts to create pad-ready industrial sites that help to competitively position our location for future economic development opportunities.

Washington County's economic development goals seek to promote economic diversification through activities which precipitate talent attraction/retention, and new investments in technology-driven businesses. The IDA understands that access to reliable internet service is a fundamental location decision driver, quality of life attribute, and infrastructure need for information, technology, and knowledge-based industries and workers. As work spaces and operating structures for technology-driven businesses can be very diverse, the IDA recognizes that not only must our industrial and business parks feature robust telecommunications infrastructure, but internet connectivity should also be available to small businesses, ecotourism destinations, and residential areas throughout our County. A successful VATI award provides an impactful investment which supports our overall vision for economic diversification and will greatly benefit the residents and small businesses of our community.

Sincerely,

Randall Blevins
Chairman
Industrial Development Authority of Washington County, VA

Smyth County Sheriff's Office

Major J.A. Joannou
Chief Deputy

Captain A.K. Powers
School Resource

B.C. "Chip" Shuler
Sheriff

819 Matson Drive • Marion, Virginia 24354
Phone: (276) 782-4056 • Fax: (276) 782-4058

Captain Mark Blevins
Patrol

Captain Bill Eller
Criminal Investigation

July 29,2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

This critical infrastructure would be a vital tool for communications for my office. Currently, the internet that is offered to us in Sugar Grove is poor to none. It would increase response time for all emergency situations. I feel broadband is critical for us here at the Sheriff's Office to take care of the citizens of Smyth County.

Sincerely,

B.C. Shuler/Sheriff of Smyth County

art by Virginia H. Green

Shannon Williams, 911 Coordinator

Phone: 276-783-3298 Ext.8314
Fax: 276-783-9314
Email: smyth911@smythcounty.org

Smyth County 911

121 Bagley Circle, Suite 110 • Marion, VA 24354

July 31, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

Broadband can make 911 and emergency alert systems more capable, allowing for better protection of lives and property. For example, with broadband, 911 call centers (also known as public safety answering points or PSAPs) could receive text, pictures and videos from the public and relay them to first responders. Similarly, the government could use broadband networks to disseminate vital information to the public during emergencies in multiple formats and languages. Finally, well-structured and well- protected broadband networks could reduce

threats to Internet-based applications. The proliferation of Internet Protocol (IP)-based communications requires stronger cybersecurity. Disasters and pandemics can lead to sudden disruptions of normal IP traffic flows. As a result, broadband communications networks must be held to high standards of reliability, resiliency and security.

Sincerely,

Shannon Williams
911 Coordinator

COUNTY OF WASHINGTON, VIRGINIA
1 GOVERNMENT CENTER PL, SUITE A
ABINGDON, VIRGINIA 24210

THERESA D. KINGSLEY-VARBLE
COORDINATOR

DEPARTMENT OF EMERGENCY MANAGEMENT

Date: August 4, 2020

Washington County Administrator
Jason Berry
1 Government Center Place, Suite A
Abingdon, VA 24210

Dear Mr. Berry:

As the Coordinator of Emergency Management, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet and enhanced cell coverage service were available in our underserved areas, it would benefit our fire and emergency medical responders by assisting to eliminate the long response time currently present due to the inability of callers to call in from some areas, requiring them to drive to a service area to summons help. These enhanced services would also assist in public awareness and notifications of emergency events and incoming emergency weather notifications.

Emergency service communications would benefit due to the ability of callers to provide live, on the scene updates to incoming units to prepare for rapid patient care, as well as to provide updates to assist with ensuring the safety of our public safety responders.

Respectfully,

Theresa D. Kingsley-Varble

Theresa D. Kingsley-Varble

276-525-1330 -TELEPHONE 276-525-1339 -TELEFACSIMILIE tkingsley@washcova.com-E-MAIL
WWW.WASHCOVA.COM

Wytheville-Wythe-Bland CHAMBER OF COMMERCE

150 East Monroe Street, Wytheville, VA 24382
276.223.3365 / Fax: 276.223.3412
chamber@wytheville.org / www.wwbchamber.com

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David Kause
Steve Lester
Paul Lindamood
Dr. Dean Sprinkle
Shane Terry
Steve Willis

Staff
Jennifer Atwell, IOM, Executive Director

July 21, 2020

Virginia Telecommunications Initiative:

On behalf of the Wytheville-Wythe-Bland Chamber of Commerce Board of Directors, this letter is in support of the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties in Virginia.

As a supporter of education, infrastructure and business, the Chamber of Commerce is pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita. The expansion of broadband internet service in these areas will expand educational, health services (via telehealth), business, and public safety opportunities to families who need these services most in a moment in time when the importance of such utilities has never been greater realized.

The Chamber of Commerce is 365-member business strong who is committed to promoting a favorable business climate for our members and communities in addition to partnering with other like organizations to make Wythe and Bland Counties a welcoming place to live, work and play. We are eager for the opportunity to partner with the Virginia Telecommunications Initiative.

Sincerely,

Jennifer W. Atwell

Jennifer W. Atwell, IOM
Executive Director

SMYTH COUNTY CHAMBER OF COMMERCE

July 27, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

As a Chamber Director, small business owner, and parent, I understand the importance of reliable broadband access to our communities. This expansion is essential for the future of economic growth, education and business retention and attraction.

Sincerely,

Sarah Gillespie

Sarah Gillespie
Executive Director

Chamber of Commerce of Smyth County, Inc.
214 West Main Street
Marion, VA 24354
Phone: 276-783-3161
sgillespie@smythchamber.org

Virginia Cooperative Extension
Smyth County Office
Dr. Andy Overbay, Senior ANR Agent
121 Bagley Circle, Suite 434
Marion, Virginia 24354
276-783-5175 Ext 8340
email: aoverbay@vt.edu
http://smyth.ext.vt.edu/

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

More and more, farm owners and operators rely on access to the internet to research and purchase supplies for their businesses. While production agriculture continues to be our county's leading industry, we have witnessed an alarming reduction in the businesses that supply the inputs that keep these farms functioning.

For example. At one time there were three equipment dealers within the town limits of Chilhowie alone. Today, the number of dealership in the entire county is....zero. More and more, farms in our region are forced to travel out of state for supplies. This results

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Virginia Tech • Virginia State University
www.ext.vt.edu

in an escalation of business expenditures without any true contribution to the overall net worth of the operation.

The ability to gain information is a more timely and efficient fashion can only serve to benefit our area farmers. I appreciate your kind consideration.

Sincerely,

Andy Overbay

Dr. Andy Overbay
Senior Extension Agent, ANR
Smyth County VCE

Virginia Highlands
COMMUNITY COLLEGE
P.O. Box 828 · Abingdon, VA 24212
276.739.2400 · www.vhcc.edu

July 24, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020
Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

I am particularly excited about this project because, as you might imagine, many of our students at Virginia Highlands Community College have less-than-adequate internet service at home. Having access to a computer and high-speed internet is absolutely critical in today's learning environment – something that has become even more urgent as learning has pivoted to a mostly online format due to the COVID-19 pandemic. Not having high-speed internet is an unsurmountable barrier for many, particularly among our low income and minority students.

VHCC is extremely grateful to be a part of this initiative and look forward to its ultimate success!

Sincerely,

Adam Hutchison, Ph.D.
President

c: S. Thomas
S. Barringer

August 11, 2020

Jason Berry, Washington County Administrator
1 Government Center Place, Suite A
Abingdon, VA 24210

Re: **Proposed project for high-speed broadband internet, expanded cellular service and emergency services communications**

Dear Mr. Berry:

As Executive Director of the Southwest Virginia Higher Education Center, I am pleased to offer my support for the proposed project to bring high-speed broadband internet service to the under- and unserved areas of Washington County, Virginia. I also support expansion of cellular service and emergency services communications throughout the county.

The mission of the Southwest Virginia Higher Education Center is to strengthen the regional economy of southwest Virginia by providing higher education and professional development training to the current and future workforce. Ten of Virginia's leading colleges and universities collaborate and share resources at the center, offering 90 undergraduate and graduate degree programs for part-time and non-traditional students. Additionally, the A. Linwood Holton Governor's School, Mount Rogers Regional Adult Education and Elite Learning are housed at the Higher Education Center. The Center and a number of its academic partners also offer a variety of learning opportunities for K-12 students, including CodeVA, the K-5 STEM Academy, Kids' Tech University, SW VA Robotics League, and annual STEM Career Workshops for Sixth-Grade Girls, among others.

Students enrolled in programs at the Center reside throughout our widespread, geographically diverse region. Especially during and as a direct result of the current global health pandemic, the critical need for high-speed broadband internet, expanded cellular service and emergency services communications in the county has been driven home forcefully.

For these and other reasons I am grateful for this opportunity to add the full support of the Southwest Virginia Higher Education Center to this important proposal.

If you require any additional information, please do not hesitate to contact me.

Sincerely,

David N. Matlock, Executive Director
Southwest Virginia Higher Education Center
(276) 619-4305

One Partnership Circle

PO Box 1987

Abingdon, VA 24212

(276) 619-4300

www.swcenter.edu

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1000 East Main Street • Wytheville. VA 24382

Phone: (276) 223-4848 • Fax: (276) 223-4770• EMAIL - dsprinkle@wcc.vccs.edu
www.wcc.vccs.edu

Office of the President

July 28, 2020

To Whom It May Concern,

On behalf of Wytheville Community College (WCC) I am writing in support of the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

As an institution providing higher education opportunities to the region, WCC is acutely aware of the importance of increasing broadband access to the area. Having to move essentially all course delivery online due to the pandemic has highlighted the challenges that already existed. Both students and employees of the college have faced challenges due to lack of broadband access. These same limitations pose challenges for business and entrepreneurial opportunities as well.

In the age of information technology, it is a difficult reality to accept that the college and schools in the region have to create "hot spots" in our parking lots in order for some students to access the internet. Through initiatives like this one, however, WCC students and their families can have the same access to broadband as those in more urban and affluent regions of Virginia.

In today' s economy, having increased access to broadband will provide expanded opportunities for those who live in our area, but whose work requires or can be enhanced by having broadband internet service. Having broadband access is essential to meet the educational needs of our students, and to the economic viability of our county.

I wholeheartedly endorse the proposed project, with confidence that it will benefit students, families, businesses and our economy. If I can provide any additional information, please do not hesitate to contact me at dsprinkle@wcc.vccs.edu.

Sincerely,

Dean E. Sprinkle, Ph.D.
President

SMYTH COUNTY SCHOOL BOARD

DR. DENNIS G. CARTER, DIVISION SUPERINTENDENT
121 BAGLEY CIRCLE, SUITE 300
MARION, VIRGINIA 24354-3140
PHONE: 276-783-3791
FAX: 276-783-3291

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DR. PAUL L. GRINSTEAD
DR. KYLE N. RHODES
TODD WILLIAMS

July 29,2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals. It is especially important for Smyth County's young people. Approximately 7 percent of Smyth County's 4,000+ school children lack Internet access. That puts them at a distinct disadvantage in the 21st Century, particularly at this time, when the Covid-19 pandemic has made virtual learning a necessity. By making affordable Internet access available to many of our students, the VATI project will level the playing field for these students.

Sincerely,

Dennis Carter
Superintendent of Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
WYTHEVILLE, VA 24382
276-228-5411
FAX: 276-228-9192
wythe.k12.va.us

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Don L. Goode

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Scott L. Jefferies, Ed.D.
DIVISION SUPERINTENDENT

July 6, 2020

To Whom It May Concern,

I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

Wythe County is an amazing place to live, work, and learn. Our school system has a strong tradition of providing the students of Wythe County with the educational experiences necessary to achieve personal and professional success. We take great pride in providing our students with these experiences, and we do our best to overcome any challenge that may get in our way.

One challenge in Wythe County that we all need to overcome is dependable, reliable, and viable internet service. There are areas of Wythe County that simply do not have the infrastructure necessary to provide our students and families with internet service. Now more than ever, with the focus on distance learning because of the COVID-19 pandemic, we need to do all we can to provide ALL of our students and families with this vital service.

Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at sjefferies@wythek12.org.

Respectfully,

Scott L. Jefferies, Ed.D.
Superintendent
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
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Scott L. Jefferies, Ed.D.
DIVISION SUPERINTENDENT

July 6, 2020

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I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

Wythe County is an amazing place to live, work, and learn. Our school system has a strong tradition of providing the students of Wythe County with the educational experiences necessary to achieve personal and professional success. We take great pride in providing our students with these experiences, and we do our best to overcome any challenge that may get in our way.

One challenge in Wythe County that we all need to overcome is dependable, reliable, and viable internet service. There are areas of Wythe County that simply do not have the infrastructure necessary to provide our students and families with internet service. Now more than ever, with the focus on distance learning because of the COVID-19 pandemic, we need to do all we can to provide ALL of our students and families with this vital service.

Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at don.goode@wythek12.org.

Respectfully,

Don Goode
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
WYTHEVILLE, VA 24382
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Scott L. Jefferies, Ed.D.
DIVISION SUPERINTENDENT

July 6, 2020

To Whom It May Concern,

I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

Wythe County is an amazing place to live, work, and learn. Our school system has a strong tradition of providing the students of Wythe County with the educational experiences necessary to achieve personal and professional success. We take great pride in providing our students with these experiences, and we do our best to overcome any challenge that may get in our way.

One challenge in Wythe County that we all need to overcome is dependable, reliable, and viable internet service. There are areas of Wythe County that simply do not have the infrastructure necessary to provide our students and families with internet service. Now more than ever, with the focus on distance learning because of the COVID-19 pandemic, we need to do all we can to provide ALL of our students and families with this vital service.

Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at ssage@wythek12.org.

Respectfully,

Stephen R. Sage
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
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DIVISION SUPERINTENDENT

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Stephen R. Sage
Don L. Goode

July 6, 2020

To Whom It May Concern,

I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

Wythe County is an amazing place to live, work, and learn. Our school system has a strong tradition of providing the students of Wythe County with the educational experiences necessary to achieve personal and professional success. We take great pride in providing our students with these experiences, and we do our best to overcome any challenge that may get in our way.

One challenge in Wythe County that we all need to overcome is dependable, reliable, and viable internet service. There are areas of Wythe County that simply do not have the infrastructure necessary to provide our students and families with internet service. Now more than ever, with the focus on distance learning because of the COVID-19 pandemic, we need to do all we can to provide ALL of our students and families with this vital service.

Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at tfreeman@wythek12.org.

Respectfully,

Tonya M. Freeman
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
WYTHEVILLE, VA 24382
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DIVISION SUPERINTENDENT

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Don L. Goode

July 6, 2020

To Whom It May Concern,

I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

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Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at amanley@wythek12.org.

Respectfully,

Ann H. Manley
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
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Ann H. Manley
Peggy A. Wagy
Stephen R. Sage
Don L. Goode

July 6, 2020

To Whom It May Concern,

I am writing to you to express my unyielding support for Wythe County's participation in the VATI grant.

Wythe County is an amazing place to live, work, and learn. Our school system has a strong tradition of providing the students of Wythe County with the educational experiences necessary to achieve personal and professional success. We take great pride in providing our students with these experiences, and we do our best to overcome any challenge that may get in our way.

One challenge in Wythe County that we all need to overcome is dependable, reliable, and viable internet service. There are areas of Wythe County that simply do not have the infrastructure necessary to provide our students and families with internet service. Now more than ever, with the focus on distance learning because of the COVID-19 pandemic, we need to do all we can to provide ALL of our students and families with this vital service.

Wythe County's participation in the VATI grant would benefit students and families who reside in Rural Retreat, Cedar Springs, Speedwell, Cripple Creek and Ivanhoe. A total of eight schools out of the thirteen in our school division receive students who live in these areas. The potential impact on our entire school division would be enormous. Simply put, this would be a game-changer for our students, families, and schools.

Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at pwagy@wythek12.org.

Respectfully,

Peggy A. Wagy

Peggy A. Wagy
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
WYTHEVILLE, VA 24382
276-228-5411
FAX: 276-228-9192
wythe.k12.va.us

Future Primum A Nobis
The Future Begins with Us

Scott L. Jefferies, Ed.D.
DIVISION SUPERINTENDENT

SCHOOL BOARD
Tonya M. Freeman, Chair
Chalmer L. Frye, Vice-Chair
Lee H. Johnson
Ann H. Manley
Peggy A. Wagy
Stephen R. Sage
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July 6, 2020

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Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at ljohnson@wythek12.org.

Respectfully,

Lee H. Johnson
School Board Member
Wythe County Public Schools

WYTHE COUNTY PUBLIC SCHOOLS

SCHOOL BOARD OFFICE
1570 WEST RESERVOIR STREET
WYTHEVILLE, VA 24382
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Without reservation, I enthusiastically endorse Wythe County's participation in the VATI grant. If I may provide any additional information, please do not hesitate to contact me at chalmer.frye@wythek12.org.

Respectfully,

Chalmer L. Frye
School Board Member
Wythe County Public Schools

Lutheran
Family Services
of Virginia

July 8, 2020

To whom it may concern,

I am writing today to express my support for the VATI grant for Washington, Smyth, and Wythe Counties.

I myself am a product of Southwest Virginia and I am proud of our cultural traditions and the natural beauty that defines our region. Unfortunately, our region is also defined by poverty, limited opportunities and a lack of infrastructure. As a proud Southwest Virginian, I am dedicated and devoted to providing our students with the capacity and opportunities to create, produce, and connect with the world that is available to Virginians in other parts of the state.

At Minnick School in Wytheville, we serve students from across Southwest Virginia, including Wythe, Smyth, and Washington Counties. Most of our students do not have adequate Internet access in their homes. The COVID-19 pandemic laid bare our region's lack of adequate Internet infrastructure. We were able to connect with many of our students through daily video chats and lessons. However, students in the outlying areas did not have adequate connectivity to allow for video. We were dependent on 19th and 20th century technology to connect with these students.

The region's participation in the VATI grant would benefit all students and families in our region. Implementation of this grant has enormous potential to provide opportunities for our families to connect and share information, resources and talents with the world beyond Southwest Virginia.

I am proud to endorse the region's participation in the VATI grant to move our communities forward. Please let me know if I can assist with any additional information. Feel free to contact me through e-mail at wsutherland@lfsva.org.

Sincerely,

William H. Sutherland
Principal Building 6
Minnick School Wytheville

WYTHEVILLE COMMUNITY COLLEGE
1000 East Main Street • Wytheville, VA 24382

Phone: (276) 223-4848 • Fax: (276) 223-4770• EMAIL – dsprinkle@wcc.vccs.edu
www.wcc.vccs.edu

Office of the President

July 8, 2020

To Whom It May Concern,

On behalf of Wytheville Community College (WCC) I am writing in support of Wythe County's Virginia Telecommunications Initiative (VATI) grant application.

As the sole institution and primary provider of higher education in Wythe County, WCC is acutely aware of the importance of increasing broadband access to the area. Having to move essentially all course delivery online due to the pandemic has highlighted the challenges that already existed. Both students and employees of the college have faced challenges due to lack of broadband access. These same limitations pose challenges for business and entrepreneurial opportunities as well.

In the age of information technology, it is a difficult reality to accept that the college and schools serving Wythe County have to create "hot spots" in our parking lots in order for some students to access the internet. Through initiatives such as VATI, however, Wythe County students and their families can have the same access to broadband as those in more urban and affluent regions of Virginia.

In today's economy, having increased access to broadband will provide expanded opportunities for those who live in our area, but whose work requires or can be enhanced by having broadband internet service. Having broadband access is essential to meet the educational needs of our students, and to the economic viability of our county.

I wholeheartedly endorse Wythe County's participation in the VATI grant, with confidence that it will benefit students, families, businesses and our economy. If I can provide any additional information, please do not hesitate to contact me at dsprinkle@wcc.vccs.edu.

Sincerely,

Dean E. Sprinkle, Ph.D.
President

Washington County Public Schools

812 Thompson Drive, Abingdon, Virginia 24210
Telephone: (276) 739-3000 FAX: (276) 628-1874

BRIAN C. RATLIFF, ED.D.
Superintendent

JEFF NOE, ED.D.
Assistant Superintendent

THE SCHOOL BOARD
Tom Musick, Chair
Terry D. Fleenor, Vice Chair
William L. Brannon
Billy W. Brooks
Megan A. Hamilton
J. Sanders Henderson, III
Elizabeth P. Lowe

Date: July 20, 2020

Washington County Administrator
Jason Berry
1 Government Center Place, Suite A
Abingdon, VA 24210

Dear Mr. Berry,

As a Washington County resident and local school superintendent, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also wholeheartedly support expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

✓ Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc....)

✓ Business (small business operations, tele-commuting, job search, workforce development, etc....)

✓ Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____Other _____

I would also like to comment:

With the current global health crisis and all the associated challenges, especially with the necessity for distance learning, we need comprehensive access, support and service now mor than ever. We cannot function with the quality that our students and families deserve without it.

Sincerely,

Brian Ratliff, ED. D
Superintendent

Washington County PUBLIC LIBRARY SYSTEM

ABINGDON · DAMASCUS · GLADE SPRING · HAYTERS GAP · MENDOTA

August 9, 2020

Washington County Administrator
Jason Berry
1 Government Center Place, Suite A
Abingdon, Virginia 24210

Dear Mr. Berry,

As the Director of the Washington County Public Library, I wish to extend our support to the proposed project to bring high speed broadband internet service to the unserved and under-served southeastern areas of Washington County. We also strongly support any expansion of cellular service and emergency services communication throughout the county.

Digital opportunity gaps disproportionally impact low-income families, rural residents, African Americans, Latinos, and people with disabilities. Libraries have been essential in addressing digital access gaps and realizing the vision of bringing broadband access to all. Washington County Public Library strongly backs the creation of new opportunities for underserved and rural communities to access the internet in their homes.

Affordable, high-capacity broadband internet access is critical to support digital learning opportunities that empower entrepreneurs, job training and retraining, and widespread use of emerging applications and devices. The overall improvement of broadband accessibility will allow more of our country residents and businesses to access the library's digital offerings, resources, and programs.

Sincerely,

Molly Schock

Molly Schock
Library Director

205 Oak Hill Street, Abingdon, VA 24210 – Phone 276-676-6222 – Fax 276-676-6235
www.wcpl.net

BLUE RIDGE DISCOVERY CENTER

EXPLORE + DISCOVER + SHARE

July 30, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County business leader, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in our area, we would use it for business operations as well as for programmatic purposes, including research, education, and data entry for citizen science projects. Given BRDC's future as a visitor hub and gateway to the mountains, increased connectivity in this area would improve the user experience for families, tourists, recreationists, and more.

Sincerely,

Aaron Floyd
Blue Ridge Discovery Center
6402 Whitetop Rd
Troutdale, VA 24378
aaron@blueridgediscoverycenter.org

Mount Rogers
COMMUNITY SERVICES

770 West Ridge Rd
Wytheville, VA 24382

276-223-3200

mountrogers.org

August 10, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

Mount Rogers Community Services provides a wide array of community services for individuals and their families in the Counties of Bland, Carroll, Grayson, Smyth and Wythe and the City of Galax, Virginia. Among these many services is a dedication to improving the quality of life for people in their home communities. Access to reliable broadband is essential to providing services in these remote areas which require documentation in a comprehensive electronic health record as well as telehealth connections. We are very excited about the access this project will bring to our communities.

Sincerely,

Sandy Bryant

Sandy Bryant, RN, LPC, LMFT
Executive Director

ABINGDON REGION
661 EAST MAIN ST
ABINGDON, VA 24210
276-623-9245 (PHONE)
276-623-1183 (FAX)

Serving the following locations:
Smyth County
Washington County

FAMILY PRESERVATION SERVICES, INCORPORATED

7/28/2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

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I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

For our agency, expanded internet access to these localities would allow us to provide essential, and much needed counseling services to the community via telehealth platform. At this time, due to covid-19 restrictions, internet access would allow us to provide services to those currently isolated in our area. This resource is also much needed to support education in our communities.

Sincerely,

Joni Lester

Joni Lester, LPC
Regional Director

Mel Leaman FreeClinic

601 Radio Hill Road • Marion, VA 24354
Tel: (276) 781-2090 • Fax: (276) 781-0866
http://melleamanfreeclinic.org

July 28, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

To whom it may concern:

As a Smyth County resident and Executive Director of the Mel Leaman Free Clinic, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

With the COVID-19 Pandemic, many of our medical providers are utilizing "Tele-Med" to reduce the traffic in the clinic the possible spread of the virus transportation is an issue for many patients Tele-Med reaches patients by phone to provide prescription refills, explain lab work, etc. Most of our patients do not have landlines and depend on cell phones. Skin rashes and other physical conditions can be transmitted by cell phone to the provider's computer screen. For our patients in the Sugar Grove and Konnarock area cell service is not reliable so this service is not an option.

If broadband internet service were available, our health information system could provide enhanced benefits and easy access for our patients. The ability for folks to call 911 or to check on their loved ones should be a right. Please reach out to me for any further information.

Thank you for your consideration,

Susan MacNeil Ferraro
Executive Director

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Nathan Burrell
Deputy Director of Government and Community Relations

Thomas L. Smith
Deputy Director of Operations

7/28/2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber-optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously underserved. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses, and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses, and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

Visitors to Hungry Mother State Park visit the park not only for our amazing resources but for the community that surrounds us as well. Having a vibrant community with plenty of local businesses and attractions within a short drive from the park is a large part of what makes Hungry Mother one of the most visited parks in the Commonwealth. Our visitors are constantly searching for activities to do and businesses to patronize within the local community, so we fully support this initiative that will help to foster and encourage growth in that area. As an employer, it is equally important to Hungry Mother State Park that students and vocational training facilities have access to the technological resources they need. Applicants to positions within our agency would

benefit greatly from improved vocational training and that training may be the deciding factor in the final hiring decision. Improving the connectivity of this region will benefit visitors to our park, improve the skills of potential applicants, and help kick start local businesses all of which will help uplift these communities. Thank you for your time and consideration.

Sincerely,

Andrew Philpot
Park Manager
Hungry Mother State Park
2854 Park Blvd.
Marion, VA 24354
276.781.7400

Virginia Telecommunications Initiative,

As a supporter of education, infrastructure and business, I wish to offer my support for the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita.

The expansion of broadband internet service in these areas will expand educational, health services (via telehealth), business, and public safety opportunities to families who need these services most in a moment in time when the importance of such utilities has never been greater realized.

Sincerely,

Kevin Williams

Kevin Williams, CPRP
Director, Wythe County Parks and Recreation
340 South Sixth Street
Wytheville, VA 24382
276-223-4519
rkwilliams@wytheco.org

Grace
Christian Academy
a ministry of Mannheth Educational Center

4927 E. Lee Hwy Max Meadows, VA 24360 ◆ 276-637-3727 ◆ www.gracechristianva.com

July 28,2020

Virginia Telecommunications Initiative,

As a Wythe County based educational institution, I wish to offer my support for the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita.

The expansion of broadband internet service in these areas will expand educational opportunities for all students and schools in Southwest Virginia and it is for this reason that we wish to lend our support to the program.

Sincerely,

Sarah R. Cooke
Director Of Operations
Grace Christian Academy
grace@breckbillbiblecollege.org

Appalachian Magazine
Travel, History, Life.
PO BOX 1174 * Wytheville, Virginia * 24382

Dr. Tamara Holmes
Dept. of Housing & Community Development
Richmond, Virginia

August 5, 2020

Dr. Tamara Holmes,

Appalachian Magazine is a Southwest Virginia-based SWaM home business that serves as an online and print publication. We currently have a quarter-million online subscribers and a monthly reach of close to one-million readers.

Unfortunately, our business is largely prohibited from growing any further due to the fact that throughout our locality there is limited broadband availability – we do not have enough Internet to host live videos, participate in virtual conference calls, streaming video and often something as simple as uploading a photo is impossible.

We are strongly in support of bringing broadband into any area of Wythe County and hope to see this grant application successful.

Very best of wishes,

Allison Farley
Appalachian Magazine

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

Dr. Holmes,

As a Wythe County resident, I wish to offer my support for the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita.

The expansion of broadband internet service in these areas will expand telehealth options for our elderly, educational opportunities for our students and will help local businesses. It is for these reasons that I wish to lend our support to the program.

Sincerely,

Gena Anders
Name

8. 10. 20
Date

United Country Anders Realty & Auction
Organization / Business if Applicable

Jamie Collins
686 Grey Branch RD
Rural Retreat VA 24368
5407658138

Date: 7/31/20

Wythe County Administrator
340 South Sixth St
Wytheville VA 24382

Dear County,

As a Wythe county resident and business manager, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for business purposes, educational purposes (as I have two teenage sons doing virtual learning with next to no internet service), health information, and public safety.

Jamie Collins

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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Sincerely,

JOSEPH WEESE
Name

8/5/2020
Date

WEESE AUCTION CO. INC
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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Sincerely,

Debbie Huffman
Name

8/5/2020
Date

Speedwell Market
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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Sincerely,

Ronald S. Blevins
Name

08-05-20
Date

WYTHE CARPET SALES & SERVICE, INC.
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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The expansion of broadband internet service in these areas will expand telehealth options for our elderly, educational opportunities for our students and will help local businesses. It is for these reasons that I wish to lend our support to the program.

Sincerely,

[signature]
Name

8-5-2020
Date

CFL · Env.
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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Sincerely,

Robert B [illegible]
Name

8-5-20
Date

Lakes To Florida
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

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The expansion of broadband internet service in these areas will expand telehealth options for our elderly, educational opportunities for our students and will help local businesses. It is for these reasons that I wish to lend our support to the program.

Sincerely,

Colleen Cummings
Name

8/5/20
Date

_____
Organization / Business if Applicable

A LETTER IN SUPPORT OF WYTHE COUNTY'S GRANT APPLICATION TO BRING HIGHSPEED BROADBAND TO MY COMMUNITY

Dr. Tamara Holmes
Virginia Dept. of Housing & Community Development
Richmond, Virginia

Dr. Holmes,

As a Wythe County resident, I wish to offer my support for the proposed joint-project to bring high speed broadband internet service to the under and unserved areas of Wythe, Smyth and Washington Counties.

I am pleased to learn of the high level of cooperation the three localities are offering in an effort to be good stewards of public funds, maximizing the number of households positively affected while at the same time minimizing the cost per capita.

The expansion of broadband internet service in these areas will expand telehealth options for our elderly, educational opportunities for our students and will help local businesses. It is for these reasons that I wish to lend our support to the program.

Sincerely,

Judy Short
Name

8/7/2020
Date

Short Way Real Estate Inc.
Organization / Business if Applicable

Re: alot of people work from home now - this would open up houses to sell in this area.

A Petition in Support of High Speed Broadband for Our Community

Wythe County has partnered with Smyth and Washington Counties to make application to the Virginia Department of Housing & Community Development to receive funding necessary to bring high-speed broadband Internet into our local community.

As citizens, we support this project:

Name	Signature	Address
Ann Wynn	Ann Wynn	Crockett, VA
Kelly Woods	Kelly Woods	Adwolfe, VA
Kathleen DeHart	Kathleen DeHart	Speedwell, VA
William Bowers	William Bowers	Rural Retreat, VA
Dionne Zinn	Dionne Zinn	Wytheville, VA
Robin Sheffey		Wytheville, VA
Debbie Bass	Debbie Bass	Speedwell VA
Greg Sayers		Speedwell VA

Sam Cox for 1762 Camp Rd
Seger Grove

Michael Phillips 2303 Dry Rd Speedwell, VA 24374

Josh Hagge 7678 Grayson Tnpk
Speedwell VA 24374

Mary Grubb 7541 Grayson
Tpke. Speedwell, VA

William Sifer 727 St. Peters Rd Speedwell VA

Chris Jewers " " "

[illegible] 6618 Grayson Turnpike, Speedwell, VA

Name	Signature	Address
William Testerman	William Testerman	941 Dry Road P.O. Box 92 Speedwell
Sagan [illegible]	[illegible]	6618 Grayson Tnpk Speedwell Va 24 374
Matthew Marshall	[illegible]	Rt 21
Shannon Boss	Shannon Boss	559 Kiser Rd
[illegible]	[illegible]	660 [illegible]
Amanda Davis	Amanda Davis	6665 Dry Rd
Doug Stuart	Doug Stuart	7111 Grayson Tpke
Lisa Voltoline	Lisa Voltoline	Dry Rd Speedwell
Rick Stonemas	[illegible]	1141 Cripple Creek Rd
Amanda R Grubb	Amanda R Grubb	7375 Grayson Turnpike

Andy Griggs

Jay

Eric Holliday

Crystal Holliday

Rebecca Sexton

Rebecca Holliday

Maudie Holliday

Rebecca Chaney

Charlie Lester 3105 Grayson Trph

Jessie Adams

Blake Cockett 889 Dry Rd Speedwell VA 24374

Amber Cooper

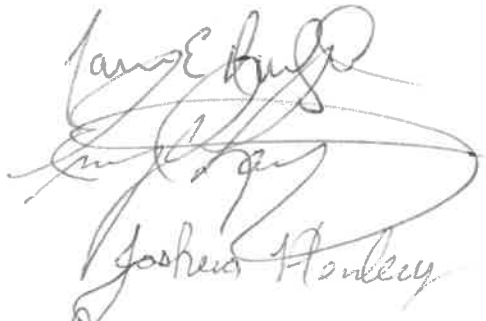
Eric Hicks

Layken Cooper

Ellie Cooper-Hicks 451 Dry Rd Speedwell Va

Rickey Whalen 471 Dry Rd. Speedwell

Name	Signature	Address
FREDDIE ROSENBAUM		339 CRIPPLE CREEK ROAD CRIPPLE CREEK, VA 24322
Kathy Cole	Kathy Cole	214 Heming Rd Wytheville VA 24382
Robert Williams		6603 Cedar Spring
Stephanie Bowles	Stephanie Bowles	6682 Grayson Turnpike Speedwell VA 24374
Tucker Colon		905 Slate Spring Branch Road Wytheville VA 24382
GROVER HARRIS		187 CAVE HILL LN Speedwell
Paula Crockett	Paula D. Crockett	889 Dry Rd Speedwell VA
Jonathan Beatez		6719 Grayson Turnpike
Monica Kirby	Monica Kirby	110 Pioneer Path Speedwell
Rose Marshall	Rose Marshall	2346 Cripple Creek Rd
Matthew Miller		370 Greek Miller Rd. Crockett VA



James Dunkley		2221 Cripple Creek Rd Ivanhoe 24350
Emory Lacy		375 Lanter RD Speedwell VA 24374
Joshua Henley	Joshua Henley	322 Lanter RD Speedwell VA. 24374
Jean Ward	Jean Ward	
David B. Rhea	D.B.R	4414 Cripple Creek, VA. 24322
Goldie Crigger	Goldie Crigger	# 860 IVES DR
Amber Crigger	Amber Crigger	251 Ives Dr
Levi Crockett	Levi Crockett	559 Dry Rd.
Jesse Underwood	Jesse Underwood	7% sprinkler
Leslie Johnson		7111 Grayson Turnpike
Adam Shaffer		884 OLD Mt Road
Jesse Leach		
Dena Underwood		474 OLD Bank Rd.
Denny Walters	Denny Walters	Pump Hollow Rd wytheville
Steve Wilson		514 Shelor Town Rd wytheville VA
JOHN W. PETRIE III		6524 CEDAR SPRINGS RD SPEEDWELL
Lindsey Groseclose	Lindsey Groseclose	5210 Skate Spring Branch Rd
David Stroupe		462 BACK Rd
Doris M. Price	Doris M. Price	190 Deer Hollow Rd. Sugar Grove, VA
Ellysia Nier	Ellysia Nier	200 Lithia Rd.
Theodore Bowles	Theodore Bowles	6652 Grayson Turnpike Speedwell, VA 24374
Tammy Hale	Tammy Hale	162 Sparrow Lane Speedwell, VA 24374
Kevin Cline		Speedwell, Va 24374
HELEN HOLLIDAY		

Charles Jason and Paige Pratt
317 Old Brunswick Rd
Sugar Grove, VA 24375
276-685-7208

July 29, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As Smyth County residents and business owners, we strongly support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. We also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in our area, we would use it for education (our children are in Kindergarten and 2nd grade and utilize online learning programs for them; we also rely upon internet for educational resources to make our businesses more successful), health information/health services (we utilize the internet to help diagnose and understand proper treatment of diseases, insect bites, etc. and we research doctors that we have been referred to use), business (we own a registered Angus operation, a feed and farm supply business and Paige has a professional speaking business), public safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.) and Paige's full-time job requires her to have and utilize internet to conduct business remotely and from home.

On June 14, 2020, Paige slipped on water lines and broke her lower leg and ankle. She required an ambulance to transport her to the hospital (and later required two surgeries that placed one plate and 12 screws in her lower leg). She was laying on the deck of our home when the accident happened, we had no cellular service and due to the lack of availability of cellular service and companies willing to install broadband service and a land line, Jason was forced to leave her there and go to the neighbor's house to summons an ambulance. If this was a life-threatening emergency, those minutes could mean the difference of life and death. In the year 2020, there is absolutely no reason why communities should go without the availability of cellular service and broadband. One company we contacted for broadband told us it would cost us over $44,000 to get internet service at our home. Our children will miss educational opportunities and our businesses suffer when we are at home. The success of our businesses is reliant upon the ability to have cellular service and broadband internet. We strongly urge you to expand these services in the Sugar Grove community.

Sincerely,

Charles Jason & Paige Pratt

Name: K. Danielle Theodore
Address: 109 Virginia Highlander Rd.
Sugar Grove, VA 24375
Telephone: 276-677-0038

Date: July 29, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

__x__ Educational (online classes, research, homework, etc.)

__x__ Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

__x__ Business (small business operations, tele-commuting, job search, workforce development, etc.)

_____ Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____ Other _____

I currently work for Ensemble Health Partners as of July 2020 and previously worked for Ballad Health before my department was sold out. Ensemble Health Partners is a work from home organization but you have to meet minimum internet speed of 25 mbps download to be able to work from home. I am currently working at an office at Johnston Memorial Hospital, owned by Ballad, and they are to discuss if they will allow this to continue. I really need internet to meet these job specifications so I don't lose my job and can continue to provide for my two small children. My child, Aubrey, also attends SGES and they expect virtual learning to be completed part of the week starting August 20, 2020 and I am not sure how this can be expected when many of us in this area don't have high speed internet to support streaming a virtual classroom. I also do direct sales on the side but have been halted with this d/t insufficient internet services.

Sincerely,

K. Danielle Theodore

Name: Robin Miller
Address: 17849 Mill Creek Rd,
Chilhowie VA, 24319
Telephone: 276-782-2280

Date: 7/28/2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Washington County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X _Business (small business operations, tele-commuting, job search, workforce development, etc.)

_____Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____Other _____

We are the first house across the Washington County line in Chilhowie. We currently only have access to Hughes Net internet service. It is extremely expensive and very slow! With all of the uncertainty of school, we are going to have to pay double in hopes that my daughter, who attends Chilhowie Elementary school, will not fall behind on the days she is not in school. OR if they have to go fully virtual at any point, she would be able to do her school work. We also have a small family farm that we advertise mainly on social media platforms. If we had better access to internet, we could increase our online based advertising and expand how customers could place orders.

Sincerely,

Robin Miller

Name: Rusty Anderson
Address: 17845 Mill Creek Road
Chilhowie, VA 24319
Telephone: 1-276-646-2797

Date: 07/27/2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X Educational (online classes, research, homework, etc.)

XHealth Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

XBusiness (small business operations, tele-commuting, job search, workforce development, etc.)

_____Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____Other _____

Currently there are no internet options at my location other than satellite internet, which has been proven unreliable (per neighbour). My kids are home schooled and do not have internet access requiring us to use the library or family member's internet service. I also was not able to work from home during this COVID pandemic since I do not have internet access. My address would imply I live in Washington County, however, my driveway starts in Washington County, but we only have property in Smyth County.

Sincerely,
Rusty Anderson

Name: Cliff Burnette
Address: 16019 Kittyhawke DR
Chilhowie VA 24319
Telephone: 276-646-2115

Date: 07/27/2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Washington & Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

_____ Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X_____Business (small business operations, tele-commuting, job search, workforce development, etc.)

_____Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____Other _____

Sincerely,

Cliff Burnette, Agent
State Farm Insurance Companies
Chilhowie, VA

Name: Janet Grissett
Address: 259 Brushy Mountain Rd
Telephone: 276-782-4426

July 27, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X Educational (online classes, research, homework, etc.)

X Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X Business (small business operations, tele-commuting, job search, workforce development, etc.)

X Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____ Other _____

I depend on quality, constant internet service for my small business. Currently, I have CenturyLink, which continually drops and is extremely slow. And, sometimes the static on the phone is so bad that I cannot carry on conversations.

Sincerely,

Janet F. Grissett

Mikel Oboyski
283 White Rock Furnace Road
Rural Retreat, Va, 24368
276-686-4031

July 30, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County business, we wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. We also support any expansion of cellular service and emergency services communications throughout the county.

If upgraded internet service were available in our area, we would use it for:

- Educational (online classes, research, homework, etc.)
- Business (small business operations, tele-commuting, job search, workforce development, etc.)
- Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

A.R.E. Summer Camp has operated in Cedar Springs for over 50 years as a spiritual retreat for children, youth, and families. Because of our distance from fiber infrastructure we have been limited, so far, to a mere 3.5 mbps down and .5 mbps up on our DSL internet connection. While we are able to scrape by, each year brings greater need for reliable internet connectivity, especially during the pandemic (even though we did not hold sessions with campers this year). It would be a great help to our business and staff if we had internet access with speeds closer to those available in less remote areas.

Sincerely,
Mikel Oboyski
Facilities Director
A.R.E. Summer Camp

Kegley Trucking Company Inc.
937 Sunset River Road
Ceres, VA 24318
Ph. 276-682-4433
Fax 276-682-4434

July 30, 2020

Tamarah Holmes, Ph.D.
Director, DHCD Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support - Virginia Telecommunications Initiative (VATI) 2020 – Smyth, Wythe, and Washington County Regional Application

Dear Dr. Holmes,

I am writing to convey my support of the application submitted by Smyth, Wythe, and Washington Counties, in partnership with Point Broadband. The project, known as Mount Rogers Broadband Expansion will allow Smyth, Wythe, and Washington Counties to install a state of the art fiber optic network in and around the communities of Damascus, Konnarock, Taylors Valley, Wideners Valley, Lodi, Sugar Grove, Cedar Springs, Speedwell, Slate Spring Branch and others across the three counties. The project will serve schools, vocational training facilities, businesses, healthcare facilities, state agencies, and most importantly will offer service to over 6500 homes previously under served. The project will also allow Smyth County to utilize a fiber route previously constructed connecting students, businesses and public safety facilities. An upgrade to the wireless infrastructure along the route will increase access to homeowners, home-based businesses and students in Smyth County, who are located in areas designated as unserved and underserved by the FCC.

As I understand it, the goal of VATI is to create strong, competitive communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure. This project is an innovative regional collaboration that will help the Commonwealth to achieve those goals.

We are writing in response to your article in the Smyth County News about improving internet and cell phone service in remote areas. We live in the Nebo section of Smyth County which has no broadband, internet, or cell phone service. We have satellite internet through Hughes Net which is not always reliable. We currently have Century Link phone service which isn't always reliable either. When we have rains, we have issues with our land line and then have issues with getting a service tech to come out. The reason we need better service is because we operate a trucking company of 20 tractor trailers. We have been in business for 50 years and 30 of those years we have operated out of this remote area. We still have our office in the Nebo area but our garage and yard are in Chilhowie, VA. We feel it is vital to get better internet and phone service to serve our company.

We also have 6 school age grandchildren that will be doing virtual schooling part of the time if not all the time and they need dependable internet service as well.

We also operate four beef cattle farms in the Nebo area. One in particular has a Mountain Top that would possibly cover the whole Nebo area and could accommodate a tower. We are interested in talking to someone about placing a tower on one of our farms. We can be reached at 276-682-4433, t_kimberlin@hotmail.com, or kegleytrucking@gmail.com.

Sincerely,

Joseph Kegley, President
Kevin Kegley, Vice President
Debra Kegley, Treasurer
Trish Kimberlin, Secretary

Dorothy Greer, Principal Broker
Heartland Real Estate, Inc
5179 Sugar Grove, VA 24375
Telephone: 276-677-3700

July 30, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

✓ Educational (online classes, research, homework, etc.)

✓ Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

✓ Business (small business operations, tele-commuting, job search, workforce development, etc.)

✓ Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

✓ Other Shopping, communication, etc.

I have been a life-long resident of this community and would like to keep my real estate office in the area. However, without adequate internet service, I may be forced to relocate. As a real estate agency, we rely on the internet for uploading photos, videos, advertising, and more. The current service is not adequate. Please consider improving the infrastructure of our community.

Sincerely,

Dorothy M. Greer

Name:Chris Stone
Address:452 Quarter Branch Rd
Telephone: 276-677-3993

Date:07/30/2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

_____ Educational (online classes, research, homework, etc.)

X_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X_____Business (small business operations, tele-commuting, job search, workforce development, etc.)

X_____Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

X_____Other Online church services during this pandemic to share our faith with others

Having high speed broadband in our community is of great importance to our citizens. As a long term rescue squad member, it is imperative to our ability to transmit EKG and other health information to the hospital for faster diagnoses and treatment of critical illnesses. Also, it is imperative to be able to share our faith with others through online services.

Sincerely,

Chris Stone

Name: Jacob & Kristy Waller
Address: 2286 Calhoun Lane
Sugar Grove, VA 24375
Telephone: 276-677-3610

Date: July 30, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X Educational (online classes, research, homework, etc.)

Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X Business (small business operations, tele-commuting, job search, workforce development, etc.)

X Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

Other _____

We have three school aged children. We also own and operate a dairy farm and a local farm market. Our current internet provider is not sufficient for all three children to access virtual learning at the same time, as well as our day to day business needs for the farm and the market. A high speed broadband internet service will greatly benefit our family and our local businesses.

Sincerely,
Jacob & Kristy Waller
Waller Dairy
The Farmhouse Market, LLC

Name: Wharf Hill United Methodist Church
Address: 5522 Sugar Grove Hwy
Sugar Grove, VA 24375

Date: July 30, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County church, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X_____ Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X_____Business (small business operations, tele-commuting, job search, workforce development, etc.)

X_____Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

X_____Other _____Virtual Church Services_____

Sincerely,
Wharf Hill United Methodist Church

Name: Henry A. Morris
Address: 533 Wassum Valley Rd
Marion, VA 24354
Telephone: 276-781-6777 (wife's #)

Date:

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

_____ Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

_____Business (small business operations, tele-commuting, job search, workforce development, etc.)

__X__Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.) I am deaf & have a caption call telephone but cannot use it without high speed internet. Incase of an emergency I have no way to communicate with 911.

_____Other _____

Please add a personal note regarding internet access and the importance to your operation/organization.

Sincerely,

Henry A Morris

Name: Kelly Morris
Address: 533 Wassum Valley Rd
Marion, VA 24354
Telephone: 276-781-6777

Date:

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

__X__ Educational (online classes, research, homework, etc.)

_____Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

__X__Business (small business operations, tele-commuting, job search, workforce development, etc.)

__X__Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.) Husband is deaf needs high speed to operate a caption call telephone he can use in case of an emergency. He has no other way to communicate with 911.

_____Other _____

Please add a personal note regarding internet access and the importance to your operation/organization.

Sincerely,

Kelly D. Morris

Rebecca Currin
514 Leslie Street
Marion, VA 24354
804-405-5421

July 28, 2020

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Smyth County resident, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

__✓__ Educational (online classes, research, homework, etc.)

__✓__ Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

__✓__ Business (small business operations, tele-commuting, job search, workforce development, etc.)

__✓__ Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

The current COVID virus has made the importance of internet access abundantly clear. Those who are working or attending school online *need* high quality broadband access. In any emergency, communication is a major factor in successful response and survival.

This spring, I completed online Master Naturalist training which was possible because I lived in Marion, rather than Sugar Grove. I have continued part time work from home but, even in Marion, have less bandwidth than is optimal.

Sincerely,

Rebecca Currin

Rebecca Currin

Name: Jacob Rolen
Address: 37200 Loves Mill Rd
Chilhowie, VA 24319
Telephone: 276-285-1210

Date:

Smyth County Administrator's Office
121 Bagley Circle, Suite 100
Marion, VA 24354

Dear Smyth County,

As a Washington/ Smyth County resident and or business owner, I wish to support the proposed project to bring high speed broadband internet service to the under and un-served areas of the county. I also support any expansion of cellular service and emergency services communications throughout the county.

If broadband internet service were available in my area, I would use it for (select all that apply):

X Educational (online classes, research, homework, etc.)

X Health Information/Health Services (research, prescriptions and medical supplies, web medicine, private medical practice, etc.)

X Business (small business operations, tele-commuting, job search, workforce development, etc.)

_____ Public Safety (emergency services, fire, rescue, law enforcement, public awareness/notification etc.)

_____ Other _____

Post COVID most education and work is done from home. Having a quality fiber network would allow us to connect to the world in a more reliable and competitive manner. It would provide a better online educational experience for our children, and seamless connectivity for our work from home experience. Many doctors' appointments are now done online, a fiber connection would allow better video conferencing for health and socializing with distanced family.

Sincerely,

Jacob Rolen

Product	Total	VATI	Non-VATI	Source of Estimate	Date
EXAMPLE					
Construction					
200 LF of fiber @$150/LF	$30,000	$15,000	$15,000	Company A	9/5/2016
Tower	$100,000	$80,000	$20,000	Company B	9/5/2016
Engineering	$20,000	$0	$20,000	ABC Engineering Firm	9/5/2016

Product	Total	VATI	Non-VATI	Source of Estimate	Date
Aerial construction labor & material	**$ 9,244,391**	**$ 3,669,772**	**$ 5,574,619**	**Internal Engineering**	**7/22/2020**
Make Ready	**$ 5,597,559**	**$ 2,222,078**	**$ 3,375,480**	**Internal Engineering**	**7/22/2020**
Design, Engineering, Permitting	**$ 1,177,991**	**$ 467,630**	**$ 710,361**	**Internal Engineering**	**7/22/2020**
Fiber cable material	**$ 1,096,791**	**$ 435,396**	**$ 661,395**	**Internal Engineering**	**7/22/2020**
UG construction labor & material (includes micro-trench)	**$ 967,753**	**$ 384,172**	**$ 583,581**	**Internal Engineering**	**7/22/2020**
Splicing labor & material	**$ 748,400**	**$ 297,095**	**$ 451,306**	**Internal Engineering**	**7/22/2020**
Cabinet / Hub labor & material	**$ 648,499**	**$ 257,436**	**$ 391,062**	**Internal Engineering**	**7/22/2020**
Materials Tax & Shipping	**$ 343,649**	**$ 136,419**	**$ 207,230**	**Internal Engineering**	**7/22/2020**
	$ -		**$ -**		

TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
4/23/2020	TTM1202597B

Provided For	Ship To
Sunset Digital Holding, LLC 1791 O.G. Skinner Drive Suite A, West Point, Ga 31833	Point Broadband 15022 Lee HWY Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	5/23/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
PLCM132CG20SA1.0	1x32 PLC Splitter,1260-1650nm, Card Guide module,2.0mm Yellow cable,with 1.0m leads SC/APC connectors.	1	480.00	480.00T
FREIGHT			0.00	0.00

Subtotal	$480.00
Sales Tax (5.3%)	$25.44
Total	$505.44

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
6/19/2020	TTM1202646B

Provided For	Ship To
Sunset Digital Holding, LLC 1791 O.G. Skinner Drive Suite A, West Point, Ga 31833	Point Broadband 15022 Lee HWY Ste 2 Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	7/19/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
OR500LCDRM1U- RACKM...	500VA / 300W Intelligent, Line-Interactive UPS with Smart App Software, AVR, 1U Rackmount, 6 NEMA 5-15R, RJ11/RJ45/Coax, USB/Serial	18	159.00	2,862.00T
OR2200LCDRM2U	2000va/1320 Intelligent Line interactive UPS with smart app sortware, avr, 2u/rm/t, 20amp, 8 nema 5-20r	9	526.00	4,734.00T
CSN27U12V-NA3-G	CSN27U12V-NA3-G	1,566	55.12	86,317.92T
TTM MAZ8x1000	MAZ 8 3C/16-5C/24 CABLE OUTDOOR RATED FOR CONNECTION BETWEEN ONT AND POWER MODULE	20,000	0.75	15,000.00T
AX30-12D-PC	AX30-12D-PC	40	77.50	3,100.00T

Subtotal	$112,013.92
Sales Tax (5.3%)	$5,936.74
Total	$117,950.66

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
7/17/2020	TTM1202657B

Provided For	Ship To
Sunset Digital Holding, LLC 1791 O.G. Skinner Drive Suite A, West Point, Ga 31833	Point Broadband 15022 Lee HWY Ste 2 Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	7/31/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
FD3-AE288J00JBBP2	3000 CABINET-288 DISTRI SCAPC w\100 whip w sc\apc connectors	7	5,198.04	36,386.28T
FREIGHT	Lead time is 13 weeks		0.00	0.00

Any questions concerning this quotation please do not hesitate to call us at (770) 416-1234

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

Subtotal	$36,386.28
Sales Tax (5.3%)	$1,928.47
Total	$38,314.75

Power & Telephone
2673 Yale Ave.
Memphis, TN 38112

QUOTE

UPC Vndr	Ack Date	Order #
000001	06/10/20	6986928-00
PO #		Page #
fd3ag288j2ajgbp2		1

Ship To: **POINT BROADBAND**
1791 O.G. SKINNER DR STE A
WEST POINT, GA 31833

Contact: **Jennifer Beck**
(901)866-3146
jennifer.beck@ptsupply.com

Cust #: **313058**
Bill To: **POINT BROADBAND**
1791 O.G. SKINNER DR STE A
WEST POINT, GA 31833

		Currency	USD
Reference		Sales Rep In	JFB
Instructions		Terms	
		Net 30 Days	
Ship Point		Via	Ship Date
Power & Telephone Supply Co.		WHS ROUTING	
Requested Ship Date	06/10/20	Freight In / Out	N/Y

Ln #	Product and Description	Quantity Ordered	Qty U/M	Unit Price	Price U/M	Net Amount
1	SPECIAL.C0MMSC0PE COMMSCOPE SPECIAL ITEMS FD3-AG288J2AJGBP2 FD3-AG288J2AJGBP2: CTO-FDH3000 Note from Product Manager "N: is not an option after the 2. Options are P or B. FD3-AG288J2AJGBP2 is hte MId for the pad mount option.	1	EA	6,942.17	EA	6,942.17

1 Lines Total ***Qty Shipped Total*** **1**

Total	**6,942.17**
Taxes	**485.96**
Invoice Total	**7,428.13**

QUOTE

Customer Copy

Buyer is responsible for evaluating and ordering product for intended use. Custom product is non-cancellable and non-returnable. Other products may not be returnable. Return policy for your order may be verified by your account manager. Buyer has fifteen (15) days from receipt to notify Seller of error, defect or damage. Otherwise, shipment is deemed acceptable. Payment Terms are stated on order. Exceptions must be mutually agreed to in writing in advance of order acceptance by Seller.
Full Terms are available at www.ptsupply.com/terms-and-conditions.

TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
7/23/2020	TTM1202667B

Provided For	Ship To
Sunset Digital Holding, LLC 1791 O.G. Skinner Drive Suite A, West Point, Ga 31833	Point Broadband 15022 Lee HWY Ste 2 Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	8/22/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
CS30C12V-E	replacement of CS24C12V2-E	25	86.60	2,165.00T
FREIGHT	#9748 STOCK		0.00	0.00

Subtotal	$2,165.00
Sales Tax (5.3%)	$114.75
Total	$2,279.75

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

1425 DAVE LYLE BLVD
ROCK HILL SC 29730-4247
Phone: 704-602-7009
Fax: 704-392-5596

To: POINT BROADBAND LLC
1791 OG SKINNER DR STE A
WEST POINT GA 31833
Attn: Paul Hall
Phone: 844-407-6468
Fax: 706-645-3981
Email: AP@POINT-BROADBAND.COM

Date: 07/29/2020
Proj Name:
GB Quote #: 0235891311
Release Nbr:
Purchase Order Nbr:
Additional Ref#
Valid From: 07/29/2020
Valid To: 08/28/2020
Contact: JOHN LAMB
Email: john.lamb@graybar.com

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Item	Item/Type	Quantity	Supplier	Catalog Nbr	Description	Price	Unit	Ext.Price
100		**60,000 EA**	**CORNING OPTICAL**	**S-OP-288-RA-A-3E-BK-SIC-CUT REEL**	288EV5-14100D53	**$2,277.68**	**1000**	**$136,660.80**
GB Part #: 26381690 UPC #:								
Item Note: **288 strand ribbon armored fiber.**								
200		**140,000 EA**	**COMMSCOPE**	**S-OP-144-LT-A-3E-BK-CMB-CUT REEL**	D-144-LN-8W-F12NS 8107365/DB	**$1,057.87**	**1000**	**$148,101.80**
GB Part #: 25687887 UPC #:								
Item Note: **144 strand loose tube non-armored fiber.**								
300		**60,000 EA**	**COMMSCOPE**	**S-OP-96-LA-A-3E-BK-CMB-CUT REEL**	D-096-LA-8W-F12NS 8107303/DB	**$707.84**	**1000**	**$42,470.40**
GB Part #: 25678935 UPC #:								
Item Note: **96 strand loose tube armored fiber.**								
400		**60,000 EA**	**CORNING OPTICAL**	**S-OP-96-RA-A-3E-BK-SIC-CUT REEL**	096EC5-14100D53	**$990.31**	**1000**	**$59,418.60**
GB Part #: 25805589 UPC #:								
Item Note: **96 strand ribbon armored fiber.**								

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted,freight terms are F.O.B. shipping point prepaid and bill. Unless noted the estimated ship date will be determined at the time of order placement.

To: POINT BROADBAND LLC
1791 OG SKINNER DR STE A
WEST POINT GA 31833
Attn: Paul Hall

Date: 07/29/2020
Proj Name:
GB Quote #: 0235891311

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Item	Item/Type	Quantity	Supplier	Catalog Nbr	Description	Price	Unit	Ext.Price
500		**75,000 EA**	**COMMSCOPE**	**S-OP-72-LA-A-3E-BK-CMB-CUT REEL**	D-072-LA-8W-F12NS 8107302/DB	**$629.64**	**1000**	**$47,223.00**
GB Part #: 25678934 UPC #:								
Item Note: **72 strand loose tube armored fiber.**								
600		**75,000 EA**	**CORNING OPTICAL**	**S-OP-72-RA-A-3E-BK-SIC-CUT REEL**	072EC5-14100D53	**$940.73**	**1000**	**$70,554.75**
GB Part #: 26381689 UPC #:								
Item Note: **72 strand ribbon armored fiber.**								
700		**60,000 EA**	**COMMSCOPE**	**S-OP-48-LA-A-3E-BK-CMB-CUT REEL**	D-048-LA-8W-F12NS 8107300/DB	**$423.31**	**1000**	**$25,398.60**
GB Part #: 25678933 UPC #:								
Item Note: **48 strand loose tube armored fiber.**								
800		**60,000 EA**	**COMMSCOPE**	**S-OP-24-LA-A-3E-BK-CMB-CUT REEL**	D-024-LA-8W-F12NS 8107298/DB	**$324.04**	**1000**	**$19,442.40**
GB Part #: 25678932 UPC #:								
Item Note: **24 strand loose tube armored fiber.**								
900		**70,000 EA**	**COMMSCOPE**	**S-OP-12-LA-A-3E-BK-CMB-CUT REEL**	D-012-LA-8W-F12NS 8107297/DB	**$259.51**	**1000**	**$18,165.70**
GB Part #: 25510999 UPC #:								
Item Note: **12 strand loose tube armored fiber.**								

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted,freight terms are F.O.B. shipping point prepaid and bill. Unless noted the estimated ship date will be determined at the time of order placement.

To: POINT BROADBAND LLC
1791 OG SKINNER DR STE A
WEST POINT GA 31833
Attn: Paul Hall

Date: 07/29/2020
Proj Name:
GB Quote #: 0235891311

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Total in USD (Tax not included): $567,436.05

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

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TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
6/1/2020	TTM1202635B

Provided For	Ship To
Sunset Digital Holding, LLC 1791 O.G. Skinner Drive Suite A, West Point, Ga 31833	Point Broadband BR0513tt160 15022 Lee HWY Ste 2 Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	7/1/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
AMSP-SCAPC-1X32	1/32 SC/APC SPLITTER--American products 21 pieces currently in stock	9 20	390.00	~~7,800.00T~~ 3510.00

Subtotal	$7,800.00
Sales Tax (5.3%)	$413.40
Total	$8,213.40

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

1425 DAVE LYLE BLVD
ROCK HILL SC 29730-4247
Phone: 704-602-7009
Fax: 704-392-5596

To: POINT BROADBAND LLC
1791 OG SKINNER DR STE A
WEST POINT GA 31833
Attn: Paul Hall
Phone: 844-407-6468
Fax: 706-645-3981
Email: AP@POINT-BROADBAND.COM

Date: 07/16/2020
Proj Name:
GB Quote #: 0235797979
Release Nbr:
Purchase Order Nbr:
Additional Ref#
Valid From: 07/16/2020
Valid To: 08/15/2020
Contact: JOHN LAMB
Email: john.lamb@graybar.com

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Item	Item/Type	Quantity	Supplier	Catalog Nbr	Description	Price	Unit	Ext.Price
9387 100		**5 EA**	**HUBBELL INC**	**PG3048BA24-PUB**	30X48X24 PG STACKABLE BOX WO BASE	**$323.89**	**1**	**$1,619.45**
GB Part #: 25464657 UPC #: ***Item Note:*** **Stock in Texas.**								
200 9388		**5 EA**	**HUBBELL INC**	**PG3048HA0009-PUB**	30X48 PG STKABLE BXCVR-HDUTY-TIER15-BLNK	**$278.49**	**1**	**$1,392.45**
GB Part #: 25464692 UPC #: ***Item Note:*** **Stock in Texas.**								
300 9981		**5 EA**	**HUBBELL INC**	**PG1324BA18**	STK BOX OB 13X24X18	**$218.32**	**1**	**$1,091.60**
GB Part #: 89005017 UPC #: 66203710039 ***Item Note:*** **Stock in Ohio.**								
400 9982		**5 EA**	**HUBBELL INC**	**PG1324HA0009**	CVR BD HD 13X24X2/HW-BLANK	**$180.40**	**1**	**$902.00**
GB Part #: 89004999 UPC #: 66203710041 ***Item Note:*** **Stock in Ohio.**								

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted,freight terms are F.O.B. shipping point prepaid and bill. Unless noted the estimated ship date will be determined at the time of order placement.

TTM Solutions, Inc

ESTIMATE

TTM Solutions, Inc
6050 Peachtree Pky
240-227
Norcross, Ga. 30092

Date	Estimate #
5/7/2020	TTM1202622B

Provided For

Sunset Digital Holding, LLC
1791 O.G. Skinner Drive
Suite A, West Point, Ga 31833

Ship To

Point Broadband
15022 Lee HWY Ste 2
Bristol, Va 24202

P.O. No.	Terms	Due Date	Rep	FOB	Project
	Net 30	6/6/2020	LDL	PPD AND ADD	QUOTE #

Item	Description	Qty	Cost	Total
FD3-AG288J2AJGBP2	TYCO 288 SPLITTER CABINET. INCLUDES 2(1X32) SPLITTERS WITH 1.5 TAIL.	3	9,101.95	27,305.85T
FREIGHT	Lead time is 5-7 weeks		0.00	0.00

Subtotal	$27,305.85
Sales Tax (5.3%)	$1,447.21
Total	$28,753.06

Phone #	Fax #	E-mail
770-416-1234	770-234-5167	bfreeman@ttmsolutions.net

Federal Communications Commission

(RETAIN FOR YOUR RECORDS)

Form 477 Filing Summary

FRN: **0028765907** | Data as of: **Dec 31, 2019** | Operations: **Non-ILEC** | Submission Status: **Revised - Submitted** | Last Updated: **Mar 3, 2020 09:51:29**

Filer Identification

Section	Question	Response
Filer Information	Company Name	Sunset Digital Communications, LLC
	Holding Company Name	Sunset Digital Communications, LLC
	SAC ID	
	499 ID	833253
Data Contact Information	Data Contact Name	Olivia Barber
	Data Contact Phone Number	(706) 518-1071
	Data Contact E-mail	olivia.barber@point.broadband.com
Emergency Operations Contact Information	Emergency Operations Name	Chad Wachter
	Emergency Operations Phone Number	(706) 773-2663
	Emergency Operations E-mail	cwachter@itchold.com
Certifying Official Contact Information	Certifying Official Name	John Kemp
	Certifying Official Phone Number	(844) 407-6468
	Certifying Official E-mail	jkemp@itchold.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	2019-12-31_BVU_FCC477_Fixed_Broadband_Deployment_Duffield - NoMax.csv	Mar 3, 2020 09:45:25	1089
Fixed Broadband Subscription	2019-12-31_BVU_FCC477_Fixed_Broadband_Subscription_Duffield.csv	Mar 3, 2020 09:45:25	199
Fixed Voice Subscription	2019-12-31_BVU_FCC477_Fixed_Voice_Data_Subscription_Duffield.csv	Mar 3, 2020 09:46:40	27

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Tennessee	Sunset Fiber, LLC	Optical Carrier/Fiber to the End User	540
Virginia	Sunset Fiber, LLC	Optical Carrier/Fiber to the End User	549
Total			**1089**

Fixed Broadband Subscription

Fixed Broadband Subscriptions by State, Technology and End-user Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Tennessee	Optical Carrier/Fiber to the End User	96	2043	92	2135
Virginia	Optical Carrier/Fiber to the End User	103	1422	88	1510
Total		199	3465	180	3645

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
10.000	1.000	1	4	5
10.000	10.000	0	10	10
15.000	15.000	0	1	1
20.000	2.000	0	3	3
20.000	20.000	0	2	2
25.000	2.000	1	0	1
25.000	5.000	2318	4	2322
25.000	25.000	0	4	4
50.000	5.000	0	59	59
50.000	50.000	0	2	2
100.000	3.000	1	2	3
100.000	8.000	0	1	1
100.000	10.000	0	34	34
100.000	50.000	803	14	817
100.000	100.000	0	9	9
200.000	20.000	0	9	9
200.000	100.000	241	0	241
200.000	200.000	0	3	3
300.000	50.000	0	9	9
500.000	250.000	61	1	62
500.000	500.000	0	3	3
1000.000	500.000	39	0	39
1000.000	1000.000	0	4	4
10000.000	10000.000	0	2	2
Total		3465	180	3645

Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Govt	Total
Optical Carrier/Fiber to the End User	10.000	1.000	1	4	5
	10.000	10.000	0	10	10
	15.000	15.000	0	1	1
	20.000	2.000	0	3	3
	20.000	20.000	0	2	2
	25.000	2.000	1	0	1
	25.000	5.000	2318	4	2322
	25.000	25.000	0	4	4
	50.000	5.000	0	59	59
	50.000	50.000	0	2	2
	100.000	3.000	1	2	3
	100.000	8.000	0	1	1
	100.000	10.000	0	34	34
	100.000	50.000	803	14	817
	100.000	100.000	0	9	9
	200.000	20.000	0	9	9
	200.000	100.000	241	0	241
	200.000	200.000	0	3	3
	300.000	50.000	0	9	9
	500.000	250.000	61	1	62
	500.000	500.000	0	3	3
	1000.000	500.000	39	0	39
	1000.000	1000.000	0	4	4
	10000.000	10000.000	0	2	2
Total			**3465**	**180**	**3645**

Fixed Voice Subscription

VGE Lines and VoIP Subscriptions by State and End-user Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Tennessee	605	529	0	0
Virginia	271	183	0	0
Total	**876**	**712**	**0**	**0**

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Tennessee	0	0
Virginia	0	0
Total	0	0

VGE Lines Provided to End Users by State, Bundle and Product Type

		by Bundle		by Product Type			
				Consumer		Bus-Govt	
State	Total	Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Tennessee	605	548	57	86	443	9	67
Virginia	271	259	12	0	183	0	88
Total	876	807	69	86	626	9	155

VGE Lines Provided to End Users by State, Ownership and Last-mile Medium

		by Ownership			by Last-mile Medium			
State	Total	Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Tennessee	605	605	0	0	605	0	0	0
Virginia	271	271	0	0	271	0	0	0
Total	876	876	0	0	876	0	0	0

Federal Communications Commission

(RETAIN FOR YOUR RECORDS)

Form 477 Filing Summary

FRN: **0006823991** | Data as of: **Dec 31, 2019** | Operations: **Non-ILEC** | Submission Status: **Original - Submitted** | Last Updated: **Mar 2, 2020 16:54:00**

Filer Identification

Section	Question	Response
Filer Information	Company Name	BVU Authority
	Holding Company Name	Sunset Fiber, LLC
	SAC ID	
	499 ID	
Data Contact Information	Data Contact Name	Olivia Barber
	Data Contact Phone Number	(844) 407-6468
	Data Contact E-mail	olivia.barber@point-broadband.com
Emergency Operations Contact Information	Emergency Operations Name	Chad Wachter
	Emergency Operations Phone Number	(706) 773-2663
	Emergency Operations E-mail	cwachter@itchold.com
Certifying Official Contact Information	Certifying Official Name	John Kemp
	Certifying Official Phone Number	(844) 407-6468
	Certifying Official E-mail	jkemp@itchold.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	2019-12-31_FCC477_Data_Deployment_Bristol - NoMax.csv	Mar 2, 2020 16:50:23	17194
Fixed Broadband Subscription	2019-12-31_BVU_FCC477_Fixed_Broadband_Subscription_BristolFootprint.csv	Mar 2, 2020 16:05:59	732
Fixed Voice Subscription	2019-12-31_BVU_FCC477_Fixed_Voice_Data_Subscription_BristolFootPrint.csv	Mar 2, 2020 16:06:22	75

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Minnesota	OptiNet	Optical Carrier/Fiber to the End User	1
Tennessee	OptiNet	Optical Carrier/Fiber to the End User	1165
Texas	OptiNet	Optical Carrier/Fiber to the End User	1

State	DBA Name	Technology	Blocks
Virginia	OptiNet	Optical Carrier/Fiber to the End User	16027
Total			**17194**

Fixed Broadband Subscription

Fixed Broadband Subscriptions by State, Technology and End-user Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Tennessee	Optical Carrier/Fiber to the End User	16	5	14	19
Virginia	Optical Carrier/Fiber to the End User	716	7549	3009	10558
Total		**732**	**7554**	**3023**	**10577**

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
0.384	0.384	0	450	450
1.000	1.000	0	1	1
1.500	0.384	0	41	41
1.500	1.000	0	101	101
1.500	1.500	0	2	2
2.000	2.000	0	171	171
3.000	1.000	0	372	372
5.000	5.000	0	28	28
6.000	1.000	1	257	258
10.000	1.000	0	100	100
10.000	10.000	0	51	51
12.000	2.000	1	306	307
20.000	2.000	2	241	243
20.000	20.000	0	12	12
25.000	2.000	0	1	1
25.000	5.000	0	19	19
25.000	25.000	0	18	18
30.000	5.000	3478	327	3805
50.000	5.000	4	219	223
50.000	50.000	0	52	52
75.000	10.000	1	0	1
100.000	3.000	0	2	2

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
100.000	10.000	0	94	94
100.000	50.000	2698	0	2698
100.000	100.000	0	52	52
150.000	20.000	21	0	21
150.000	150.000	0	18	18
200.000	20.000	0	14	14
200.000	100.000	1274	0	1274
200.000	200.000	0	22	22
250.000	250.000	0	1	1
300.000	50.000	0	18	18
300.000	300.000	0	2	2
400.000	400.000	0	2	2
500.000	250.000	46	0	46
500.000	500.000	0	4	4
600.000	600.000	0	1	1
1000.000	500.000	28	0	28
1000.000	1000.000	0	17	17
2000.000	2000.000	0	5	5
5000.000	5000.000	0	1	1
10000.000	10000.000	0	1	1
Total		**7554**	**3023**	**10577**

Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Optical Carrier/Fiber to the End User	0.384	0.384	0	450	450
	1.000	1.000	0	1	1
	1.500	0.384	0	41	41
	1.500	1.000	0	101	101
	1.500	1.500	0	2	2
	2.000	2.000	0	171	171
	3.000	1.000	0	372	372
	5.000	5.000	0	28	28
	6.000	1.000	1	257	258
	10.000	1.000	0	100	100

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Govt	Total
	10.000	10.000	0	51	51
	12.000	2.000	1	306	307
	20.000	2.000	2	241	243
	20.000	20.000	0	12	12
	25.000	2.000	0	1	1
	25.000	5.000	0	19	19
	25.000	25.000	0	18	18
	30.000	5.000	3478	327	3805
	50.000	5.000	4	219	223
	50.000	50.000	0	52	52
	75.000	10.000	1	0	1
	100.000	3.000	0	2	2
	100.000	10.000	0	94	94
	100.000	50.000	2698	0	2698
	100.000	100.000	0	52	52
	150.000	20.000	21	0	21
	150.000	150.000	0	18	18
	200.000	20.000	0	14	14
	200.000	100.000	1274	0	1274
	200.000	200.000	0	22	22
	250.000	250.000	0	1	1
	300.000	50.000	0	18	18
	300.000	300.000	0	2	2
	400.000	400.000	0	2	2
	500.000	250.000	46	0	46
	500.000	500.000	0	4	4
	600.000	600.000	0	1	1
	1000.000	500.000	28	0	28
	1000.000	1000.000	0	17	17
	2000.000	2000.000	0	5	5
	5000.000	5000.000	0	1	1
	10000.000	10000.000	0	1	1
Total			**7554**	**3023**	**10577**

Fixed Voice Subscription

VGE Lines and VoIP Subscriptions by State and End-user Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Minnesota	4	0	0	0
Tennessee	18	1	0	0
Texas	29	0	0	0
Virginia	11967	4320	0	0
Total	**12018**	**4321**	**0**	**0**

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Minnesota	0	0
Tennessee	648	0
Texas	0	0
Virginia	0	0
Total	**648**	**0**

VGE Lines Provided to End Users by State, Bundle and Product Type

		by Bundle		by Product Type			
				Consumer		Bus-Govt	
State	Total	Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Minnesota	4	0	4	0	0	0	4
Tennessee	18	17	1	0	1	0	17
Texas	29	29	0	0	0	0	29
Virginia	11967	10418	1549	672	3648	836	6811
Total	**12018**	**10464**	**1554**	**672**	**3649**	**836**	**6861**

VGE Lines Provided to End Users by State, Ownership and Last-mile Medium

		by Ownership			by Last-mile Medium			
State	Total	Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Minnesota	4	4	0	0	4	0	0	0
Tennessee	18	18	0	0	18	0	0	0
Texas	29	29	0	0	29	0	0	0
Virginia	11967	11967	0	0	11967	0	0	0
Total	**12018**	**12018**	**0**	**0**	**12018**	**0**	**0**	**0**

Federal Communications Commission

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Form Section	File Name	Date & Time	Number of Rows
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Fixed Broadband Subscription	2019-06-30_BVU_FCC477_Fixed_Broadband_Subscription_BristolFootprintR2.csv	Sep 2, 2019 10:31:39	803
Fixed Voice Subscription	2019-06-30_BVU_FCC477_Fixed_Voice_Data_Subscription_BristolFootPrintR2.csv	Sep 2, 2019 10:32:31	75

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Minnesota	OptiNet	Optical Carrier/Fiber to the End User	1
Tennessee	OptiNet	Optical Carrier/Fiber to the End User	1155
Texas	OptiNet	Optical Carrier/Fiber to the End User	1

State	DBA Name	Technology	Blocks
Virginia	OptiNet	Optical Carrier/Fiber to the End User	16027
Total			17184

Fixed Broadband Subscription

Fixed Broadband Subscriptions by State, Technology and End-user Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Tennessee	Optical Carrier/Fiber to the End User	16	5	15	20
Virginia	Optical Carrier/Fiber to the End User	787	9537	3145	12682
Total		803	9542	3160	12702

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
0.384	0.384	0	450	450
1.000	1.000	0	1	1
1.500	0.384	0	52	52
1.500	1.000	0	160	160
1.500	1.500	0	2	2
2.000	2.000	0	179	179
3.000	1.000	0	419	419
5.000	5.000	0	44	44
6.000	1.000	1	265	266
8.000	2.000	0	3	3
10.000	1.000	0	91	91
10.000	10.000	0	53	53
12.000	2.000	0	282	282
15.000	5.000	0	5	5
20.000	2.000	1	248	249
20.000	20.000	0	23	23
25.000	2.000	0	1	1
25.000	5.000	4	41	45
25.000	25.000	0	19	19
30.000	5.000	3729	326	4055
50.000	5.000	331	201	532
50.000	25.000	1857	1	1858

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
50.000	50.000	0	47	47
75.000	10.000	1	0	1
100.000	3.000	0	2	2
100.000	10.000	0	78	78
100.000	50.000	2306	0	2306
100.000	100.000	0	57	57
150.000	20.000	33	0	33
150.000	75.000	0	8	8
150.000	150.000	0	18	18
200.000	20.000	0	13	13
200.000	100.000	1251	0	1251
200.000	200.000	0	20	20
250.000	30.000	1	0	1
250.000	250.000	0	4	4
300.000	50.000	0	8	8
300.000	300.000	0	2	2
400.000	400.000	0	2	2
500.000	250.000	18	0	18
500.000	500.000	0	5	5
600.000	600.000	0	1	1
1000.000	500.000	9	0	9
1000.000	1000.000	0	25	25
2000.000	2000.000	0	2	2
5000.000	5000.000	0	2	2
Total		**9542**	**3160**	**12702**

Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Optical Carrier/Fiber to the End User	0.384	0.384	0	450	450
	1.000	1.000	0	1	1
	1.500	0.384	0	52	52
	1.500	1.000	0	160	160
	1.500	1.500	0	2	2

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Business / Consumer	Govt	Total
	2.000	2.000	0	179	179
	3.000	1.000	0	419	419
	5.000	5.000	0	44	44
	6.000	1.000	1	265	266
	8.000	2.000	0	3	3
	10.000	1.000	0	91	91
	10.000	10.000	0	53	53
	12.000	2.000	0	282	282
	15.000	5.000	0	5	5
	20.000	2.000	1	248	249
	20.000	20.000	0	23	23
	25.000	2.000	0	1	1
	25.000	5.000	4	41	45
	25.000	25.000	0	19	19
	30.000	5.000	3729	326	4055
	50.000	5.000	331	201	532
	50.000	25.000	1857	1	1858
	50.000	50.000	0	47	47
	75.000	10.000	1	0	1
	100.000	3.000	0	2	2
	100.000	10.000	0	78	78
	100.000	50.000	2306	0	2306
	100.000	100.000	0	57	57
	150.000	20.000	33	0	33
	150.000	75.000	0	8	8
	150.000	150.000	0	18	18
	200.000	20.000	0	13	13
	200.000	100.000	1251	0	1251
	200.000	200.000	0	20	20
	250.000	30.000	1	0	1
	250.000	250.000	0	4	4
	300.000	50.000	0	8	8

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Business / Consumer	Govt	Total
	300.000	300.000	0	2	2
	400.000	400.000	0	2	2
	500.000	250.000	18	0	18
	500.000	500.000	0	5	5
	600.000	600.000	0	1	1
	1000.000	500.000	9	0	9
	1000.000	1000.000	0	25	25
	2000.000	2000.000	0	2	2
	5000.000	5000.000	0	2	2
Total			**9542**	**3160**	**12702**

Fixed Voice Subscription

VGE Lines and VoIP Subscriptions by State and End-user Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Minnesota	4	0	0	0
Tennessee	25	1	0	0
Texas	29	0	0	0
Virginia	12076	4577	0	0
Total	**12134**	**4578**	**0**	**0**

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Minnesota	0	0
Tennessee	593	0
Texas	0	0
Virginia	0	0
Total	**593**	**0**

VGE Lines Provided to End Users by State, Bundle and Product Type

State	Total	by Bundle		by Product Type			
				Consumer		Bus-Govt	
		Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Minnesota	4	4	0	0	0	0	4
Tennessee	25	25	0	0	1	0	24

State	Total	by Bundle		by Product Type			
				Consumer		Bus-Govt	
		Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Texas	29	29	0	0	0	0	29
Virginia	12076	10559	1517	721	3856	839	6660
Total	**12134**	**10617**	**1517**	**721**	**3857**	**839**	**6717**

VGE Lines Provided to End Users by State, Ownership and Last-mile Medium

State	Total	by Ownership			by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Minnesota	4	4	0	0	4	0	0	0
Tennessee	25	25	0	0	25	0	0	0
Texas	29	29	0	0	29	0	0	0
Virginia	12076	12076	0	0	12076	0	0	0
Total	**12134**	**12134**	**0**	**0**	**12134**	**0**	**0**	**0**

Telecommunications Needs Assessment and Development of Remedial Strategies for

Southwest Virginia

Prepared for:

The Virginia Department of Housing and Community Development

The Town of Nickelsville

LENOWISCO, Cumberland Plateau, and Mount Rogers PDCs

May 8, 2019

Prepared by

THOMPSON & LITTON

and

B R A S G
Blue Ridge Advisory Services Group

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2 EXECUTIVE SUMMARY

This report documents a comprehensive needs assessment of the telecommunications services in thirteen counties and three cities in Planning Districts 1, 2 and 3 in Southwest Virginia.

The rural parts of Southwest Virginia are largely under-served, with some areas completely *unserved*, by broadband providers. The low population density in the region and the highly challenging geography -- the Appalachian Mountain range -- make it unlikely that the region's leaders will be able to rely on the private sector to solve this problem – if there were a market-based business case, the investor-owned service providers would already be serving.

With few exceptions, the Incumbent Local Exchange Carriers' traditional copper and cable networks are insufficient to meet the current and future bandwidth needs of the region. Due to the financial impracticality of deploying current-technology networks, most incumbent local exchange carriers have neglected to extend, upgrade, or expand their networks in the region. Through public and private investment funds, others have built middle-mile fiber along the main corridors but generally without a last-mile solution.

This lack of ubiquitous, affordable, reliable broadband has had an ongoing impact on the region. In many areas covered in this study, populations are declining. Communities are having difficulties retaining youth. Economies are stagnant and lacking the means to grow. Residents are frustrated and, in some cases, indignant about the lack of broadband and wireless. Students are falling behind. Small businesses cannot compete. Larger businesses are moving out of the region. Not all of these maladies are caused by lack of sufficient broadband services, but it is certainly a contributing factor.

The need and demand for broadband communications services is great. The demand is sufficient to justify a long-term public investment. The total projected cost for broadband is estimated at $52 Million. This represents a high-level estimate of the total cost to solve the last-mile issue at 62 high-priority communities within the three Planning Districts. This cost estimate is based upon leveraging the existing investments made by the Virginia Tobacco Region Revitalization Commission, the Virginia Coalfield Economic Development Authority, the EDA, and other providers of capital in the regional communications infrastructure. The plan calls for approximately -372 miles of new backbone fiber and 931 miles of drops, resulting in an estimated cost of $ 7,584 per home. The investment will pass over 9,800 homes and it is estimated 6,884 will subscribe to service. It must be noted that these unserved and underserved 62 communities are the most difficult to reach with the sparsest population density. Also, once the backbone is built to serve these communities, additional incremental (those not subscribing to service in the initial buildout) can be added for approximately $2,200 per residence, depending upon drop length.

The following table displays the breakdown of the residences to be served, the miles of backbone and drops, and total estimated cost to remediate the targeted areas by Planning District.

Cost Estimate	Regional Total	PDC 1	PDC 2	PDC 3
Homes Passed	**9,831**	1,368	4,574	3,889
No. of Customers (at take rate)	**6,884**	957	3,202	2,725
Miles of Backbone	**372**	70	126	177
Miles of Drop	**931**	130	433	368
Total Cost (EST)	**$ 52,207,296**	$ 8,662,984	$ 20,566,494	$ 22,977,817
Cost per Home	**$ 7,584**	$ 9,052	$ 6,423	$ 8,432

This $52 million investment will not solve all of the regional connectivity problems. It will however, address access to high-speed Internet service for the communities in the greatest need.

Additionally, this plan does not address wireless services (cellular) in the region. Simply put, there is no path forward to improving commercial wireless services in the region without a partnership/collaboration with one of the major wireless operators. The region has immense potential to build upon the wireless infrastructure deployed for the 4g project, but it is fruitless to build additional towers, distributed antennae systems, or microcells in hopes that a wireless service provider will use the assets. Wireless operators are inscrutable in their network planning and never use assets simply because they have been made available.

The prioritized list of communities to be addressed are presented in Section 5 of this report. For implementation of this plan we recommend that the regional leaders find a way to formalize a relationship with Scott County Telephone Cooperative, Citizens Telephone Cooperative, and CPC Broadband. All three of these organizations have displayed a long history of *purpose-over-profit* and shared values with the regional planning leaders to improve the quality of life in the region and drive economic development. For any collaboration to work, shared values is the most important characteristic for success.

To fund this plan Section 7.2 of the Appendices lists the resources available to improve the lack of broadband services in the identified communities. It is recommended that a separate legal entity be organized to address the connectivity issues (broadband and

wireless) in the 13 -county region. Additionally, that Executive Director must be tasked with specific accountabilities (and rewards) to seek funding for these high priority communities. In short, all of rural America will be competing for these funds. The regional leaders must become tireless advocates for the region's communications needs.

Intuitively, everyone understands there is a correlation between investments in broadband and economic development. The relationships are well studied and there are a number of scholarly articles that quantify the impacts of investment in rural broadband and economic growth, specifically:

- Gross Domestic Product Per capita Increase,
- Median Household Income Increase, and
- Productivity Increase

One of the more recent studies commissioned by the World Bank, studied the economic impact in developing economies:

Digital Dividends. Exploring the Relationship Between Broadband and Economic Growth, by Michael Minges, 2016.

The study concludes that a 10 percentage point increase in fixed broadband penetration would increase GDP growth by 1.21% in developed economies and 1.38% in developing ones. The GDP of the 13 county region is approximately $12 Billion annually. The resulting economic impact in the region from the proposed investment can be expected to yield between $145 Million and $166 Million of economic growth, recurring annually.

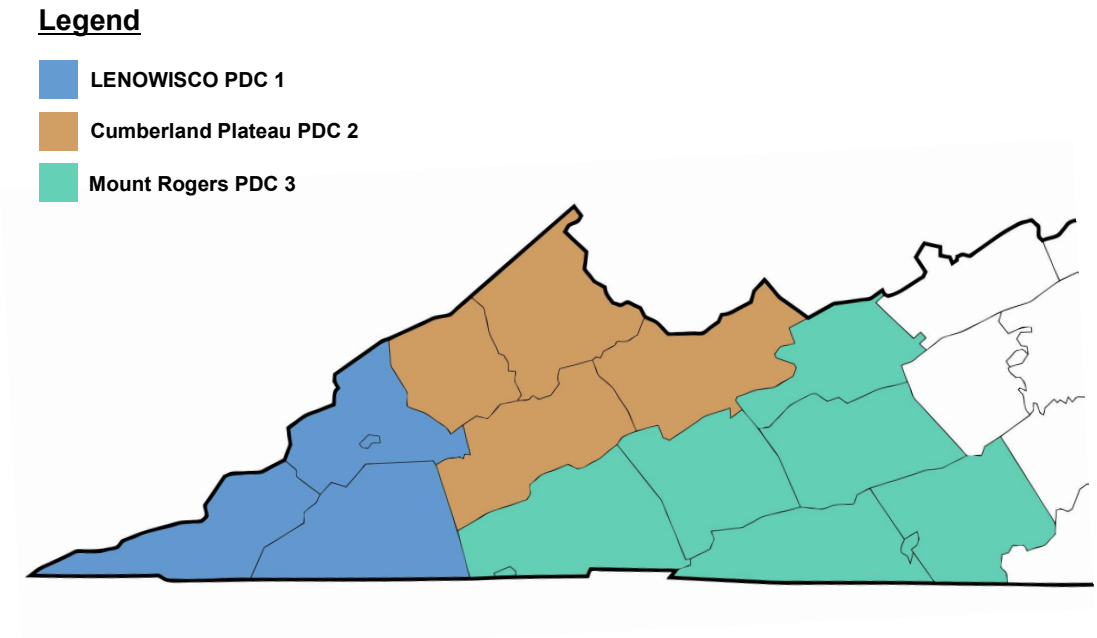
There are hundreds of scholarly articles supporting this expectation.

3 INTRODUCTION

This report documents a comprehensive needs assessment of the telecommunications services in thirteen counties and three cities in Planning Districts 1, 2 and 3 in Southwest Virginia.

3.1 Project Area

Broadband Project Assessment Area – SW VA



Despite the fact that Southwest Virginia has seen over $160 mm in capital investment over the last 20 years to improve the communications infrastructure, the region still has significant gaps in coverage. In 2016, a study by the Virginia Chamber of Commerce indicated that only 53 percent of rural Virginians had access to broadband Internet compared to urban areas with 96 percent.

During the course of this study, many communities have come forward to highlight the fact that there are areas completely unserved and underserved, and that many services are unaffordable. This outcry prompted leaders within the planning districts to strive to help improve high-speed Internet service, emergency communications service, and wireless service.

The areas studied are outlined in the following table. Across the region, population densities are low, and counties and cities are losing population due to the lack of vibrant economies. To support a growing economy, the region must have sufficient infrastructure and technologies.

Region	2010 Census	2018 Estimate	Percent Change	Square Miles	Density per Sq. Mile
Bland	6,824	6,432	-6%	358	18
Bristol city	17,835	16,877	-5%	13	1,297
Buchanan	24,098	21,576	-10%	503	43
Carroll	30,042	29,141	-3%	475	61
Dickenson	15,903	14,516	-9%	331	44
Galax City	7,042	6,587	-6%	8	799
Grayson	15,533	15,330	-1%	442	35
Lee	25,587	23,994	-6%	436	55
Norton City	3,958	3,908	-1%	7	522
Russell	28,897	27,057	-6%	474	57
Scott	23,177	22,121	-5%	536	41
Smyth	32,208	30,475	-5%	451	68
Tazewell	45,078	41,973	-7%	519	81
Washington	54,876	53,992	-2%	561	96
Wise	41,452	38,386	-7%	403	95
Wythe	29,235	28,650	-2%	462	62
Total/Average	**401,745**	**381,015**	**-5%**	**5,977**	**211**

3.2 Project Team

Thompson and Litton Engineers

Thompson & Litton Engineers (T&L), a local professional services firm, was selected to develop the study. T&L teamed with Blue Ridge Advisory Services Group, Inc. (Blue Ridge) to complete a comprehensive needs assessment and identify potential remedial solutions for the LENOWISCO (PDC 1), Cumberland Plateau (PDC 2), and Mount Rogers (PDC 3) planning districts.

T&L has over 100 employees in eight offices, offering an array of engineering, architectural, surveying, planning and construction services throughout Southwest Virginia, Tennessee, and West Virginia. T&L has designed 15 broadband projects and numerous wireless deployment projects since 2006.

With offices in Wise, Tazewell, and Chilhowie, T&L has a presence in each PDC associated with this study and is committed to providing superior service to the people within the region, as it has since 1956.

T&L's related project experiences include:

- Roanoke Valley Broadband Authority
- Citizens Telephone Cooperative
- Bristol VA Utilities/Cumberland Plateau
- Virginia Coalfield Coalition
- Verizon Wireless
- AT&T Mobility
- Nextel Communications
- SBA Communications
- Roanoke County, Virginia
- Virginia State Police

Blue Ridge Advisory Services Group

Blue Ridge Advisory Services Group (Blue Ridge) is a professional services firm that has been serving the telecommunications sector for 20 years. The firm provides strategies, business plans, feasibility studies, financial modeling, and other value-added related services to bring about actionable plans to improve communities.

Blue Ridge's related project experience includes:

- Dominion Energy Telecommunications,
- DukeNet,
- CaroNet,
- TVA Telecom,
- Bonneville Power Telecom,
- Mid-Atlantic Broadband (and LIT Networks),
- Virginia Coalfield Coalition 4g Wireless.
- LENOWISCO LLC
- Roanoke Valley Broadband Authority
- Consolidated Cooperative FTTH Initiative

The study is being funded by a grant from the Appalachian Regional Commission (ARC) and Virginia Department of Housing and Community Development (DHCD). It is sponsored by the Town of Nickelsville, the Cumberland Plateau, LENOWISCO and Mount Rogers PDCs, and the Virginia Coalfield Coalition (VCC). The results of this study will serve to increase awareness and knowledge of where the broadband gaps are and hopefully lead to improved broadband choices for all residents, businesses, and visitors in Southwest Virginia.

3.3 Deliverables

The final deliverables of this study include this written report, as well as two presentations to the management team. The first presentation was made in February 2019 and was followed by a second presentation in April 2019. All work products are the property of the ARC, DHCD, the VCC, the three PDCs, and the Town of Nickelsville.

3.4 Methodology

T&L and Blue Ridge worked with a cross-functional management team of regional representatives to define:

- Accomplishments in the Region,
- Community Needs,
- Regional Needs,
- Remedial Strategies and Associated Costs,
- Prioritized List of Communities in Greatest Need,
- Potential Funding Sources and Strategies, and
- Potential Service Providers.

To identify the specific needs of each community (as well as the regional needs identified in Section 7.1 of the Appendices to this report) Blue Ridge conducted 40 interviews with key stakeholders in the region, covering 13 counties and 3 cities in Southwest Virginia, including:

- 8 with LENOWISCO
- 6 with Cumberland Plateau
- 8 with Mount Rogers
- 7 with industry leaders/stakeholders in the region
- 11 with telecom service providers that are active in the region

3.5 Accomplishments in Southwest Virginia

Over the past 20 years, approximately $168 Million dollars of public investments have been made in Planning Districts 1, 2 and 3 to enhance broadband communication. The following table shows a breakdown of those investments by planning district.

Planning District	Amount Invested
LENOWISCO	$ 71,579,167
Cumberland Plateau	$ 45,758,931
Mount Rogers	$ 50,383,291
Total Public Investment in Planning Districts 1, 2, & 3	**$167,721,389**

Beginning in 2000, the PDCs, realizing that the Internet was more than a passing fad, began to aggressively integrate broadband planning into their regional planning. Attitudes towards broadband gradually shifted from being considered an *amenity* to being recognized as a *necessity*. Broadband has become a quality of life issue and a necessity for ensuring economic development in every region. Essentially, it is the modern day equivalent of the Rural Electrification Act from the 1930s that brought electricity to rural America. In fact, today many are calling broadband "*the fifth utility*."

On a national level, investments are being made in tele-health, school system technology, distance learning, and emergency preparedness. Telecommunications grants and loans are being made to improve services in each of these critical areas within the study area.

While some of these grant awards were single purpose and would not allow broadband operators to maximize their use by connecting all classes of commercial and residential customers in some cases, technology investment has driven and enhanced economic development in certain areas. A prime example of this is the Southwest Virginia Technology Center of Excellence, which is a software development and systems integration facility in the town of Lebanon in Russell County. CGI Group Inc., the fifth largest independent information technology and business process services firm in the world, invested in the area because of the grant-funded fiber optic backbone. Northrop Grumman Corporation, an American global aerospace and defense technology company, is also located in Lebanon.

Other examples include DP Facilities, Inc. data center in Wise County and Sykes Enterprises' call centers in Buchanan and Wise Counties. Norton (PDC 1) has a Medicare transportation call center and one of its partners – the medical records data center - is in Duffield (Scott County). It is billed as "the first Tier 4 commercial data center in the US."

4 Regional Needs

The region's needs to support technology-enabled, quality-of-life-improving applications were identified by interviewing key stakeholders throughout the three planning districts. Regional leaders view broadband as a necessity - a "4th utility." Some county leaders have taken the lack of broadband into their own hands and have begun their own initiatives to secure better services (Grayson County's RFP, for example).

Major Trends

These viewpoints and initiatives demonstrate the following major trends/needs that were identified during the interview process:

- Plenty of middle-mile fiber exists in the region but there is **very little last mile connection**, especially in the more rural areas/off the main corridors. This presents a real need for a last-mile solution, as several providers have deployed fiber in the region along the major corridors but haven't extended the lines. The existing last mile providers, the incumbent local exchange carriers (ILECs), have not invested in upgrading their networks to adequately serve customers or ensure reliability in service.
- Broadband is available in areas with higher densities (cities such as Bristol and/or Norton), but issues include **unaffordable prices, lack of competition, and low quality of service**
- Some areas lack the basics - *cable TV* and/or reliable *landline* service
- **Cellular service is spotty** throughout parts of the region; there is no comprehensive cellular solution. *Some areas still run on 3G.*
- Residents in the more rural areas seem to tolerate the lack of coverage. Visitors and prospective investors -- who are accustomed to better services -- do NOT. They take their business elsewhere.

Impact on Economic Development

While there is adequate connectivity to most of the industrial parks in the region, the lack of broadband in many areas has a profound impact on economic development.

- **Attracting Investment** - Prospective companies expect broadband to be available & won't wait for it to be built to suit. If a business expects to locate, high speed broadband with 4G is anticipated. Potential investors who cannot place a phone call from their cell phones are immediately turned off.
- **Tourism** - Tourists don't come back without cell service.
- **Infrastructure** - Broadband infrastructure is key to economic survival. Can't "get in the game" or even "sit on the bench" without it.
- **Workforce** - It's a serious "workforce issue" for retaining employees or getting new hires to relocate. Non-traditional, virtual jobs, and work from home will become more and more the future.

- **Innovation** - Broadband is necessary to foster innovation and to retain young people -- largest export is educated youth.
- **Real Estate** - Impacts home sales, as there is a noted lower demand for homes without access to broadband
- **Farming** - Impacts farming as operations become more technology-driven

Impact on Citizens

- **Options** - Without fiber and broadband, communities are unable to develop and provide advanced services
- **Price** - Consumers experience substantial pricing differentials across the region, depending on the level of competition
- **Speeds** – There is a gap between what's advertised and what residents are experiencing, plus asymmetry between upload and download speeds

Impact on Emergency Medical Services

- Seamless emergency services communication is necessary
- A large concern by EMS is reaching tourists who cannot place cellular calls from remote areas
- Some people have to use landlines to call 911. As an illustration, in Haysi, if a call doesn't go through, it doesn't get forwarded, and callers have no access to emergency service.

Impact on Educational System

- Schools are well connected, but there is a major disconnect between school and home accessibility, also known as the "homework gap"

5 PRIORITIZATION OF COMMUNITIES

To prioritize the communities, the following methodology was agreed upon and used:

Rank	Criteria	Weight
1	**Level of Need**	**50 points**
	a) Un-served	
	b) Underserved	
2	**Number of Potential Connections**	**30 points**
3	**Cost**	**20 points**
	a) Backbone Connection Cost	
	b) Cost Per Connection (wireless, fiber)	

5.1 Broadband – Target Areas for Improvement

The following areas have been identified as targets for remediation in descending order of priority.

PDC 1 -- Broadband

PDC 1 - LENOWISCO								
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Lee	District 5 (north of 58 Alt)	62	$ 8,100	43	3	6	$ 348,313
2	Scott	Gate City to Duffield	366	$ 10,688	256	24	35	$ 2,736,206
3	Wise	Appalachia - Stonega	268	$ 6,388	188	7	25	$ 1,201,032
4	Wise	Appalachia - Exeter	260	$ 6,578	182	8	25	$ 1,197,236
5	Wise	Coeburn	150	$ 7,005	105	5	14	$ 735,528
6	Wise	Guest River	103	$ 10,309	72	6	10	$ 742,264
7	Wise	Birchfield	91	$ 12,389	64	7	9	$ 792,921
8	Lee	Blackwater	39	$ 19,884	27	6	4	$ 536,867
9	Wise	Hurricane	29	$ 18,631	20	4	3	$ 372,618
		TOTAL - PDC 1	**1,368**	**$ 9,052**	**957**	**70**	**129**	**$ 8,662,984**

PDC 2 -- Broadband

PDC 2 - CUMBERLAND PLATEAU								
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Tazewell	Baptist Valley	712	$ 3,671	498	2	67	$ 1,828,233
2	Dickenson	Haysi	37	$ 5,454	26	1	4	$ 141,813
3	Russell	Cleveland to Carbo	690	$ 4,246	483	6	65	$ 2,050,899
4	Buchanan	Council to Davenport	473	$ 3,415	331	0	45	$ 1,130,458
5	Tazewell	Abbs Valley	370	$ 3,899	259	2	35	$ 1,009,884
6	Tazewell	Gratton Valley	341	$ 5,317	239	6	32	$ 1,270,687
7	Dickenson	Honey Camp	85	$ 9,467	60	5	8	$ 568,009
8	Buchanan	Conaway	77	$ 10,159	54	5	7	$ 548,573
9	Buchanan	Big Rock	76	$ 7,936	53	3	7	$ 420,621
10	Tazewell	Richlands to Jewell Ridge	248	$ 7,172	174	9	23	$ 1,247,892
11	Buchanan	Dismal River Rd to Whitewood	234	$ 11,460	164	17	22	$ 1,879,384
12	Dickenson	Clinchco	112	$ 4,267	78	1	11	$ 332,822
13	Tazewell/Buchanan	Jewell Ridge to Bearwallow	63	$ 13,490	44	6	6	$ 593,565
14	Tazewell	Thompson Valley	167	$ 11,241	117	12	16	$ 1,315,201
15	Russell	Green Valley Rd	139	$ 7,311	97	5	13	$ 709,206
16	Russell	Belfast Mills	129	$ 7,011	90	4	12	$ 630,976
17	Tazewell	Tannersville	122	$ 13,576	85	11	12	$ 1,153,952
18	Buchanan	Home Creek	105	$ 7,835	74	4	10	$ 579,798
19	Buchanan	Hurricane Creek	89	$ 9,166	62	5	8	$ 568,297
20	Dickenson	Breaks	78	$ 8,462	55	4	7	$ 465,385
21	Buchanan	Hurley	57	$ 9,021	40	3	5	$ 360,833
22	Dickenson	Hill Ridge	56	$ 6,974	39	2	5	$ 271,981
23	Dickenson	Lick Creek	79	$ 16,872	55	10	7	$ 927,987
24	Buchanan	Bearwallow to Peapatch	35	$ 22,402	25	6	3	$ 560,039
		TOTAL - PDC 2	**4,484**	**$ 209,957**	**3,139**	**126**	**425**	**$ 20,566,494**

PDC 3 -- Broadband

PDC 3 - MOUNT ROGERS									
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Washington	South of Glade Spring	182	$ 7,733	127	7	17	$ 982,091
2	Bland	Ceres	39	$ 6,271	27	1	4	$ 169,327
3	Grayson	Providence to Fries	374	$ 4,548	262	4	35	$ 1,191,642
4	Smyth	Sugar Grove	301	$ 4,910	211	4	29	$ 1,035,967
5	Bland	Clear Fork	113	$ 13,752	79	11	11	$ 1,086,374
6	Smyth	Rich Valley	443	$ 6,863	310	14	42	$ 2,127,419
7	Bland	Bland to Holly Brook	283	$ 10,703	198	19	27	$ 2,119,121
8	Carroll	Hillsville to Fancy Gap	254	$ 7,132	178	9	24	$ 1,269,484
9	Washington	Damascus	182	$ 3,768	127	1	17	$ 478,483
10	Wythe	Austinville	175	$ 5,955	123	4	17	$ 732,497
11	Bland	Grapefield	96	$ 16,083	67	11	9	$ 1,077,560
12	Grayson	Independence to Elk Creek	185	$ 9,485	130	10	18	$ 1,233,007
13	Bland	Dry Fork	151	$ 8,958	106	8	14	$ 949,500
14	Grayson	Baywood	76	$ 6,313	53	2	7	$ 334,601
15	Washington	Mendota	63	$ 4,959	44	1	6	$ 218,205
16	Grayson	Galax to Old Town	60	$ 5,962	42	1	6	$ 250,419
17	Washington	Hayter's Gap	45	$ 9,927	32	3	4	$ 317,649
18	Smyth	Chilhowie Industrial Park	1	$ 88,852	1	1	0	$ 88,852
19	Bland	Little Creek	119	$ 15,516	83	13	11	$ 1,287,826
20	Carroll	Dugspur to Laurel Fork	105	$ 15,285	74	11	10	$ 1,131,108
21	Grayson	Independence to Bridle Creek	101	$ 9,296	71	5	10	$ 660,010
22	Wythe	Castleton Road	98	$ 9,239	69	5	9	$ 637,484
23	Carroll	South of Woodlawn	73	$ 8,112	51	3	7	$ 413,735
24	Wythe	Barren Springs	53	$ 8,221	37	2	5	$ 304,195
25	Grayson	East of Troutdale	25	$ 7,217	18	1	2	$ 129,910
26	Grayson	Mouth of Wilson to Rugby	87	$ 14,762	61	9	8	$ 900,503
27	Grayson	Rte 58 to Providence	77	$ 12,331	54	6	7	$ 665,873
28	Grayson	Elk Creek to Comers Rock	74	$ 9,816	52	4	7	$ 510,407
29	Grayson	Bridle Creek to Mouth of Wilson	54	$ 17,752	38	7	5	$ 674,567
		TOTAL - PDC 3	**3,889**	**$ 349,720**	**2,725**	**177**	**368**	**$ 22,977,817**

5.2 Broadband Prioritized Target Areas for Improvement; All PDCs

Ranking	PDC	County	Target Area for Improvement - Broadband
1	PDC2	Tazewell	Baptist Valley
2	PDC3	Washington	South of Glade Spring
3	PDC3	Bland	Ceres
4	PDC2	Dickenson	Haysi
5	PDC2	Russell	Cleveland to Carbo
6	PDC2	Buchanan	Council to Davenport
7	PDC3	Grayson	Providence to Fries
8	PDC2	Tazewell	Abbs Valley
9	PDC2	Tazewell	Gratton Valley
10	PDC3	Smyth	Sugar Grove
11	PDC3	Bland	Clear Fork
12	PDC2	Dickenson	Honey Camp
13	PDC2	Buchanan	Conaway
14	PDC2	Buchanan	Big Rock
15	PDC1	Lee	District 5 (north of 58 Alt)
16	PDC3	Smyth	Rich Valley
17	PDC1	Scott	Gate City to Duffield
18	PDC3	Bland	Bland to Holly Brook
19	PDC1	Wise	Appalachia - Stonega
20	PDC1	Wise	Appalachia - Exeter
21	PDC3	Carroll	Hillsville to Fancy Gap
22	PDC2	Tazewell	Richlands to Jewell Ridge
23	PDC2	Buchanan	Dismal River Rd to Whitewood
24	PDC3	Washington	Damascus
25	PDC3	Wythe	Austinville
26	PDC2	Dickenson	Clinchco
27	PDC3	Bland	Grapefield
28	PDC2	Tazewell/Buchanan	Jewell Ridge to Bearwallow
29	PDC3	Grayson	Independence to Elk Creek
30	PDC2	Tazewell	Thompson Valley
31	PDC3	Bland	Dry Fork
32	PDC1	Wise	Coeburn
33	PDC2	Russell	Green Valley Rd
34	PDC2	Russell	Belfast Mills
35	PDC3	Grayson	Baywood
36	PDC3	Washington	Mendota
37	PDC3	Grayson	Galax to Old Town
38	PDC3	Washington	Hayter's Gap
39	PDC3	Smyth	Chilhowie Industrial Park
40	PDC2	Tazewell	Tannersville
41	PDC3	Bland	Little Creek
42	PDC3	Carroll	Dugspur to Laurel Fork
43	PDC2	Buchanan	Home Creek
44	PDC1	Wise	Guest River
45	PDC3	Grayson	Independence to Bridle Creek
46	PDC3	Wythe	Castleton Road
47	PDC2	Buchanan	Hurricane Creek
48	PDC2	Dickenson	Breaks
49	PDC3	Carroll	South of Woodlawn
50	PDC2	Buchanan	Hurley
51	PDC2	Dickenson	Hill Ridge
52	PDC3	Wythe	Barren Springs
53	PDC3	Grayson	East of Troutdale
54	PDC1	Wise	Birchfield
55	PDC3	Grayson	Mouth of Wilson to Rugby
56	PDC2	Dickenson	Lick Creek
57	PDC3	Grayson	Rte 58 to Providence
58	PDC3	Grayson	Elk Creek to Comers Rock
59	PDC3	Grayson	Bridle Creek to Mouth of Wilson
60	PDC1	Lee	Blackwater
61	PDC2	Buchanan	Bearwallow to Peapatch
62	PDC1	Wise	Hurricane

5.3 Cellular – Target Areas for Improvement

PDC 1 – Wireless

PDC 1	
County	**Target Area for Improvement - Cellular**
Lee	Blackwater
Lee	Ewing
Lee	Flatwoods
Lee	Keokee
Lee	LMU Vet School
Lee	Rose Hill
Lee	St Charles
Norton	Flag Rock Recreation Area
Norton	Hawthorne Drive
Scott	Clinchport to Dungannon
Scott	Dungannon
Scott	Fort Blackmore
Scott	Gate City to Duffield
Scott	Gate City to Nickelsville
Scott	Nickelsville
Scott/Russell	Nickelsville to Lebanon (Russell County, 30 mi)
Scott	Rye Cove
Scott	Twin Springs
Wise	Airport
Wise	Appalachia
Wise	Coeburn
Wise	Guest River area (NW of Norton, N of Blackwood)
Wise	Pound
Wise	Wise (past the airport towards Dickenson County)

PDC 2 – Wireless

PDC 2	
County	**Target Area for Improvement - Cellular**
Buchanan	US 460 Vansant to Richlands
Buchanan/Dickenson/Russell	Route 80/Scenic Bike Trail
Dickenson	Clintwood to St. Paul
Dickenson	Edwards Ridge
Dickenson	Haysi
Dickenson	Lick Creek
Russell	Cleveland
Russell	Dante
Russell	Honaker
Russell	Lebanon to Hansonville
Russell/Washington	Hansonville to Abingdon

PDC 3 – Wireless

PDC 3	
County	**Target Area for Improvement - Cellular**
Bland	Ceres
Bland	Clear Fork
Bland	Dry Fork
Bland	Grapefield
Bland	Holly Brook
Bland	Little Creek
Carroll	Dugspur
Carroll	Laurel Fork
Carroll	S of Woodlawn/NE of Lambsburg
Washington	Abingdon

Wireless Service in the Future

Unlike Broadband Service, little can be done by the regional leaders to improve wireless communications without the full cooperation and assistance of a major wireless carrier.

It is impossible to forecast the total capital cost to improve the wireless coverage in these unserved communities. The recent 4g wireless project undertaken by the Virginia Coalfield Coalition resulted in significant regional coverage expansion (estimated at 90% of the population in PDCs 1 and 2) for $15 Million, with a matching capital expenditure by a carrier. It is reasonable to estimate that a similar budget would be required to achieve 100% coverage.

One thing is clear from the initial 4g wireless initiative. There can be no economic development, eco-tourism, smart communities, smart electric grid, autonomous vehicles, or anything of the like without solid wireless communications network.

5th Generation Wireless (5G).

The next evolution of wireless communications (mobile point-to-multipoint communications, sometimes called "cellular") is called 5th Generation Wireless or 5G. 5G is a standards-based protocol that enables much higher data transmission speed to wireless devices than any previous standard.

Why is 5G important? 5th generation wireless will enable speeds of up to 4 gigabits per second. That is 80 times faster than the speeds experienced on a 4g LTE network. Our world is becoming increasingly more dependent upon mobile data. Things like Smart Cities, Smart Grid, Hi-definition Tele Health, and Autonomous Vehicles will all require 5G.

What is the network like? 5G operates at a much higher wave frequency than any of the previous generation's networks. This means the signals will travel shorter distances and not be able to travel through impediments. However, the frequencies will carry much greater data payloads.

The FCC concluded its first 5G spectrum auction this year in the 28 GHz band, and its auction of 24 GHz spectrum is taking place right now. Later this year, the FCC will auction the upper 37 GHz, 39 GHz, and 47 GHz bands.

5G will require a completely different network architecture and infrastructure than is currently in place. Instead of 200 foot-tall towers with large macro cells that can cover miles of territory, 5G will require small-cell or micro-cell architecture that broadcasts only a few hundred feet. It is generally believed that 5G cells will be required every thousand feet or so. Cells will be placed on light poles, utility poles, rooftops, and sides of buildings. The cells are small and require less power than macro cells. A key component of the network is fiber optic cable, as all cells must be connected with fiber to meet the bandwidth and latency requirements.

When will 5G be deployed? Carriers are working on beta tests and early network testing in a handful of metropolitan markets. The complete spectrum auction being managed by the FCC will not be completed until the end of 2019. Mobile handset makers like Apple will not release a 5G phone until late 2020 or 2021. 5G will not be widely available for several years. The initial deployments that have been announced are all major metropolitan areas. It is unknown how long, if ever, 5G will be deployed in rural markets like our three Planning Districts. ***There is nothing expected from 5G that would disrupt the plan outlined in this document for the foreseeable planning horizon.***

6 Recommendations and Next Steps

It is neither the purpose nor the intention of this study to point out the obvious to the leadership of PDCs 1, 2, and 3. The situation is plainly known to every planner, politician, stakeholder, and citizen in the region – **the communications infrastructure in Southwest Virginia is woefully inadequate to move the region forward**.

There are areas of breakthrough performance that can be pointed to as major successes:

1. LIT Networks bringing direct fiber connectivity and terabit speeds to the region from Ashburn thus enabling the development of critical data centers. Lowering the cost of wholesale Internet for all regional service providers. And providing diversity to the major Internet NAPs in Atlanta Georgia with ring protection.

2. Scott County Telephone's, Citizens Telephone's, and Sunset Digital's Fiber to the Home (FTTH) initiatives delivering gigabit speeds to residential customers.

3. The VCC 4g wireless project which enabled 4th generation wireless services to reach a reported 90% of the population of PDC's 1 and 2 (excluding Scott and Tazewell Counties).

4. CPC Broadband (formerly CPC OptiNet) is a subsidiary company of the Cumberland Plateau PDC. It was organized to serve Russell, Dickenson, Tazewell, and Buchanan Counties. Partnering with Point Broadband the Company has obtained over $37 million in grant funding for the construction of 700 miles of fiber optic broadband backbone that is now serving almost 900 industrial, commercial, governmental and educational institutions in the region, including Northrup Grumman, Sykes, Pyott-Boone, and Dickenson County Public Schools.

Yet, despite these successes, the plain truth is that without service **ubiquitously** in the region, there can be no sustainable economic development, job creation and retention, and work force development.

The purpose of this report is to identify a prioritized inventory of areas to address; presented in Section 5. Our recommendations for implementing improvement are as follows:

6.1 Recommendations

1. Address the broadband problem on a regional basis as three PDC's, not individually, competing against one another for scarce resources. Consider forming a separate legal entity (or repurposing an existing one like the VCC) specifically to attack solving the broadband problems in the region. Hire a

dedicated Executive Director and task him/her with time-specific and measurable goals. Link compensation to goal attainment.

2. This report presents a priority list by PDC, and a single integrated list. There are economies of scale to network deployment. It may be far more cost effective to attack the highest priority from PDC 3 and a middle priority from PDC 2 at the same time. This should be considered before undertaking a strict buildout of the presented priorities.

3. Formalize agreements with SCTC, Citizens, and CPC Broadband that outline the mechanics of how network will be funded, deployed, operated, and maintained, including any revenue sharing.

4. Continue to encourage WISPs such as iGo, HillCom, and Gigabeam to deploy their wireless networks in unserved markets. While wireless is neither as robust nor as high-a-quality service as fiber, this is a situation where anything is better than nothing for the unserved customer. The encouragement can come in the form of discounted costs for tower attachment, access to dark fiber, and assistance with grant/loan programs.

5. Ignore the notion that some communities may eventually be served by virtue of the Connect America Fund. The FCC Connect America Fund recipients are not obligated to serve customers for up to six years. The unserved residents of Southwest Virginia need service NOW.

6. Attain legislative assistance, particularly for wireless (cellular) deployments. Several times in this report it has been noted that there is no path forward for wireless expansion without a carrier's participation. When the VCC implemented the 4g wireless program in 2011, it was only possible because of the leadership of Delegate Kilgore and the Tobacco Commission striking a deal with a commercial wireless provider.

7. Strive to get Southwest Virginia broadband worked into the annual state budget. Governor Northam has noted several times that rural broadband is a priority for his administration. In December 2018, the Governor announced plans to ask the General Assembly to commit $46 million in the state's upcoming budget to assist rural areas of Virginia to get broadband Internet access. The Southwest Legislative Delegation should strive for a specific earmark for the region.

7 ATTACHMENTS AND APPENDICES

7.1 COMMUNITY NEEDS APPENDIX

LENOWISCO

The following table shows the population change and density per square mile for PDC 1 – LENOWISCO (Lee, Norton, Wise, and Scott).

PDC 1	2010 Census	2018 Estimate	Percent Change	Square Miles	Density/Sq. Mile
Lee	25,587	23,994	-6%	436	55
Norton City	3,958	3,908	-1%	7	522
Wise	41,452	38,386	-7%	403	95
Scott	23,177	22,121	-5%	536	41
Total/Average	94,174	88,409	-5%	1,382	68

Lee County

Lee County is served by Comcast and Verizon with additional services provided by Sunset Digital Communications.

Pennington Gap and Jonesville are the main population centers within the county and are relatively well served. However, St. Charles and the surrounding communities are not as well served. A few areas reported no telephone service in inclement weather and a complete void of multi-channel video service. Of course, high speed Internet service is non-existent. Business services are limited.

From Rose Hill westward toward Cumberland Gap, complaints about broadband service have been ongoing for years.

Verizon, the Incumbent Local Exchange Carriers (ILEC) in the region, is offering broadband services using DSL in some portions of the region. DSL has a physical

distance limitation that precludes it from being widely available. Even then, DSL is insufficient to meet the current FCC definition of broadband. Because of the technology limitations, it is understood there are no upgrades forthcoming for DSL that will keep pace with current bandwidth services in most of the nation.

Poor cellular service is a common complaint. New towers are being planned in Lee County for emergency services. The county planners are building these towers to accommodate commercial carriers in the hope that macro cells will be collocated on these towers and improve that wireless situation. To date, no commercial carriers have shown an interest in these new towers. Local officials understand that cellular wireless service is inadequate throughout the county and that it is an impediment to sustainability.

Communities identified as high-priority for broadband expansion are:

- District 5 (north of 58 Alt)
- Keokee
- Blackwater
- Flatwoods
- Rose Hill
- Ewing

"The two things which we must overcome as a community and as a region is the challenge of overcoming the older generation/leaders' way of thinking and planning for the expected exponential change in [broadband] capacity needs in the future." – Leton Harding, Powell Valley National Bank

Wise County

Wise County receives most of its digital services from Comcast, Verizon, Sunset Digital, and Scott County Telephone Cooperative (SCTC).

Wise County has several backbone networks traversing the county with acceptable service levels to many. As a result, the county has seen economic development opportunities improve. One major data center, two call centers, and one digital-operations-center have located in Wise County.

However, not all residents of Wise County are receiving satisfactory services. Customers farthest from the main networks experience service quality and reliability failures, and competitive services options are not available. Greater speeds for uploads and downloads are needed for work-at-home opportunities for entrepreneurs and the general workforce.

Wise County communities identified as high-priority for broadband expansion are:

- Powell Valley
- Appalachia and the immediately surrounding coal camps
- Blackwood
- Areas north of the City of Norton
- West of US. 23
- Areas outside of Coeburn toward Scott County
- Smaller communities northeast of the Town of Wise
- Coeburn Mountain area (including Airport Road)
- Northwest of St. Paul
- Pound

Scott County

Scott County Telephone Cooperative is the Incumbent Local Exchange Carrier for the county. SCTC has been very active in providing advanced telecom services throughout the county and region. Residents and businesses located near SCTC's central offices, remote access nodes, and switching centers receive excellent service. However, communities located further from the main exchanges don't have all of the bandwidth necessary to power their digital needs.

All schools in the county are well served; however, the lack of last-mile connectivity to residents hampers the full digital curricula potential.

The lack of adequate wireless (cellular) coverage throughout the county continues to be a challenge, with routine complaints coming in from various governmental entities within the county.

Specific communities in need for improved cellular service include:

- Nickelsville
- Fort Blackmore
- Rye Cove and
- Dungannon

"Our biggest obstacle is not the infrastructure, but our vision of how to use that infrastructure." – Danny Dixon, Vice Mayor of Nickelsville

City of Norton

The City of Norton has enjoyed robust communications services for years as a result of Verizon hosting a major Central Office in the downtown area. Economic development has taken advantage of that situation by successfully recruiting several digital businesses over the years including the Dual Party Relay Center providing services for the entire Commonwealth of Virginia through a contract with AT&T. That center recently closed as a result of contract changes and consolidation of services elsewhere. Verizon has also placed a directory assistance center within the city as has the statewide service that arranges Medicaid transportation services for their clients.

Cumberland Plateau

The following table shows the population change and density per square mile for PDC 2 – Cumberland Plateau (Buchanan, Dickenson, Russell, and Tazewell Counties).

PDC 2	2010 Census	2018 Estimate	Percent Change	Square Miles	Density/Sq. Mile
Buchanan	24,098	21,576	-10%	503	43
Dickenson	15,903	14,516	-9%	331	44
Russell	28,897	27,057	-6%	474	57
Tazewell	45,078	41,973	-7%	519	81
Total/Average	113,976	105,122	-8%	1,826	56

Buchanan County

Buchanan County is deep within the Coalfields of Virginia, adjacent to both Kentucky and West Virginia. The greatest communications network challenges in Buchanan County are the steep mountain terrain. However, a certain "can do" attitude exists which has fostered creative solutions to many problems.

This theme carried throughout the interviews conducted in the county. When solutions weren't forthcoming from the service providers, local leaders took the initiative to raise funds and, in some cases, worked directly with the incumbent providers to extend services into communities where a business case could be made.

Educational institutions have created strong demand for broadband and wireless services, making communications a critical success factor for the region. A private law school and college of pharmacy have been operational in Buchannan County since 1994 and 2003,

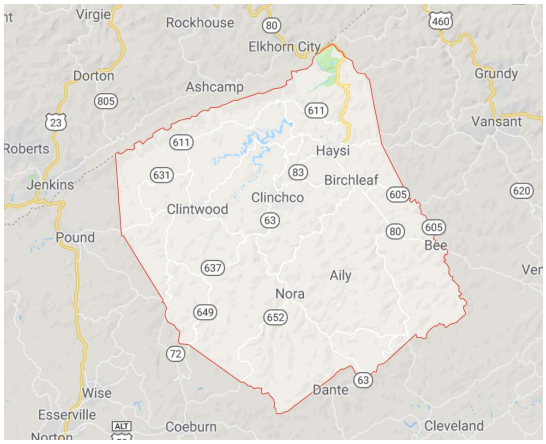
respectively. The Appalachian College of Optometry is in the planning stages. These institutions have helped stabilize an economy that is in transition from coal mining and related support industries.

However, several communities still lack adequate broadband service, including:

- Conoway
- Home Creek
- Pea Patch
- Hurricane Creek
- Bearwallow
- Dismal River Road

"I was told that representatives of Google were in town for a potential contract with Sykes Enterprises, but the representatives left when they couldn't place calls via their AT&T handsets. They were concerned about availability of broadband in general after that experience." – Craig Horne, Buchanan County Administrator

Dickenson County



Officials in Dickenson County report that connectivity is so poor that businesses are unable to utilize telemetry payment systems. Additionally, it was learned that residential needs were not being met adequately and that lack of competition results in excessive pricing.

Dickenson County is witness to the fact that poor cellular coverage results in a poor tourism experience. In a county where tourism is considered an "up-and-coming" industry, officials were clearly frustrated at the lack of a path forward to address the wireless problem.

Specific areas in need include:

- Haysi,
- The entire southern half of the county, and
- Approximate 12-mile radius around Sandy Ridge, and
- 5 miles in every direction from the center of Nora.
- Hills/Ridges
- Edwards Ridge
- Route 80
- Lick Creek

"Poor cellular overage results in unsatisfying tourism experiences for our visitors" - Rita Surratt, Director, Dickenson County Chamber of Commerce

Russell County

Service providers in Russell County include Shentel, Verizon, and the Cumberland Plateau Company through a partnership with Sunset Digital. Russell County has capitalized on the "gig economy" by successfully recruiting call centers and software development centers to the region.

High-speed fiber lines were first placed in Lebanon nearly two decades ago which allowed the creation of data center and software development jobs.

However, connectivity beyond the Lebanon and the transportation corridors is still a problem for most of the county.

Affordability of broadband services was mentioned as a particular issue in Russell County.

When interviewees were asked about particular Russell County needs, "***all areas beyond Lebanon***" was the response.

Particular communities outlined regarding cellular wireless service needs included:

- Lebanon to Gate City - 71 - No service 75% of the time (1 hr. drive)
- Lebanon to Hansonville - Dropped calls/spotty coverage
- Lebanon to Abingdon - Dropped calls/spotty coverage
- Dante (near St. Paul) - Dropped calls/spotty coverage
- Cleveland - Dropped calls/spotty coverage
- Swords Creek -- Dropped calls/spotty coverage

The most pressing concern however was the inability to foster innovation and retain young people without dependable, affordable, quality broadband communications.

From an economic development perspective, "you can't 'get in the game' or even 'sit on the bench' without broadband infrastructure." – Rachel Patton, WIAOne Assistant Director

Tazewell County

Service providers in Tazewell County include Verizon, Spectrum, Burkes Garden, Comcast and Sunset. Tazewell County communities identified as high-priority for broadband expansion:

- Gratton Valley
- Tannersville and Clear Fork
- Thompson Valley
- Baptist Valley
- Abbs Valley
- Jewell Ridge
- Bluestone Commerce Park

The poor condition of Verizon legacy infrastructure is of great concern. Even landline service, the most basic of all telecom services, is unreliable.

In terms of cellular service, the main transportation corridor running through the county was the only reliable area for wireless communication.

"The most important piece of technology in the classroom is the teacher." – Drennon Laney, Server and Systems Administrator, Tazewell County Public Schools.

Mount Rogers

The following table shows the population change and density per square mile for PDC 3 – Mount Rogers (Bland, Bristol, Carroll, Galax, Grayson, Smyth, Washington, and Wythe).

PDC 3	2010 Census	2018 Estimate	Percent Change	Square Miles	Density per Sq. Mile
Bland	6,824	6,432	-6%	358	18
Bristol City	17,835	16,877	-5%	13	1,297
Carroll	30,042	29,141	-3%	475	61
Galax City	7,042	6,587	-6%	8	799
Grayson	15,533	15,330	-1%	442	35
Smyth	32,208	30,475	-5%	451	68
Washington	54,876	53,992	-2%	561	96
Wythe	29,235	28,650	-2%	462	62
Total/Average	193,595	187,484	-3%	2,770	305

Bland County

Bland County, the least populated county studied, was recently awarded a $459,764 grant from the Appalachian Regional Commission for a 33-mile fiber build to businesses and institutions in the county. The fiber run will start in Rocky Gap, then south through Bastian, then to Bland. The fiber will run along the Route 52 corridor. Once the fiber construction is finished, an ISP partner will use wireless technology to reach additional locations off Route 52. The project will make Internet access available to 37 businesses, as well as Bland County Schools, the Board of Education offices and the Bland County Medical Clinic, a federally qualified health center.

The existing providers in Bland County primarily use fixed wireless and existing DSL network plant to provide service and include:

- Sunset - Middle-mile fiber along Rt. 42 to Bland Correctional Facility
- CenturyLink – Some 10 MBPS service over copper but mostly 3 MBPS
- Verizon
- Gigabeam – Serving approximately 200 residents using towers throughout the county. They provide 50 MBPS service for $79/mo. and 25 MBPS for $30/mo.

Bland currently has a public-private partnership with Gigabeam Networks for up to 2 gig wireless.

Currently, the residential needs are not being met. The following areas were identified as having the greatest needs:

- Ceres (agriculture, tourism, 42/52 split)
- Grapefield
- Dry fork, Clear Fork, and Little Creek
- Hollybrook

Carroll County

Carroll County has a population of approximately 29,724. Parts of the county are adequately served (the north side of Hillsville, for example), but other areas (specifically the south side of Hillsville) can only get about 1.5 MBPS, or “barely enough to e-mail.” In terms of cellular coverage, U.S Cellular has “good coverage” along main transportation corridors.

Resident complaints stem from CenturyLink and the lack of responsiveness to customers. The county has good broadband in the industrial parks, but workforce is the big issue for economic development.

CenturyLink is using its incumbent network (DSL) to serve customers and used CAF funding to make it look as if customers had access to broadband when, in fact, they didn't.

Areas of greatest need include:

- Pipers Gap
- Laurel Fork
- Dugspur Region
- South of Woodlawn/Northeast of Lambsburg (FastLink has about 300 customers north of Lambsburg)

Grayson County

Grayson County has been very proactive in pursuing solutions to its communities' broadband needs. In fall 2018, Grayson County issued an RFP for Broadband Services.

While a high level of detail on Grayson County's specific needs can be found in the RFP, a high level assessment is that most of the county is underserved or unserved.

- 77%, or 5,222 households have documented need for improved broadband
- Broadband is the number one need in the community. After Broadband, "Roads" are the number two need.
- Real estate sales and values are impacted by the degree to which broadband is available in a community.
- There is a potential growth opportunity for farmers to implement enabling technologies to better manage farm operations, but these technologies often require a broadband infrastructure
- Population retention & recruitment is a top priority for the Grayson County government. Broadband is considered #1 opportunity to solve this problem.

- As a former health care administrator, the County Administrator sees the value of connectivity to the entire population to improve health outcomes, especially in an area such as Grayson with a "graying population."
- A lack of high speed communications is also contributing to the loss of young people after graduation.
- Areas of greatest need in the county (from current RFP):
  - Wilson & Elk Creek Districts; Mouth of Wilson, Rugby, East of Troutdale, Comers Rock
  - Providence, Elk Creek and Old Town; Elk Creek, Independence, Baywood
  - Wilson & Elk Creek Districts; East Mouth of Wilson, Buck Mountain, Big Ridge, Bridle Creek
  - Wilson District; West Mouth of Wilson, Whitetop
  - Providence, Old Town Districts; Fries, Baywood (east)
- Existing providers include:
  - CenturyLink
  - HughesNet and Exceed (WildBlue)
  - Comcast
  - Lingo (via Wired Road)
  - Citizens Telephone
- There are 13 total towers in the County but providers lack the incentive to upgrade.

> "*High speed communication is a driver and enabler for the community. After Broadband, 'Roads' are the number two need." – Bill Shepley, Grayson County Administrator*

Smyth County

Smyth County has some fiber assets in the area through Sunset but, like many other counties in the planning districts covered in this report, needs a last mile solution. The business community's needs are not being met and are at risk of leaving.

Providers serving Smyth County include CenturyLink, Comcast, and Sunset. There are no competitive local exchange carriers in the area. Cell phone service is "totally unreliable" in certain areas (northern and southern bands of the county), but providers won't locate off the towers in the area. The majority of the complaints are about CenturyLink's service.

The communities within Smyth County with the greatest need are:

- Sugar Grove
- Rich Valley.

Washington County

In Washington County, business needs are being met only along I-81 corridor and within the Town of Abingdon and the City of Bristol. Beyond a three-mile radius from that corridor, businesses are either underserved or unserved. Residential needs are even greater. Mendota, Glade Spring and Damascus are all in need of service. Complaints from residents are frequent.

Service providers include Sunset, Charter, CenturyLink, and Comcast. Cellular wireless providers include VZW, T-Mobile and AT&T.

The specific communities within the county with the greatest needs include:

- Mendota
- Glade Spring
- Damascus

Wythe County

In general, the industrial parks have good service. Businesses located along the transportation corridors are considered adequately served due to the amount of fiber available. However, residential coverage is spotty. The county has been suffering from economic stagnation in recent years. Historically, Wythe had been slowly growing while counties to the west were losing population. Only recently has the trend changed in Wythe as well. The current population is just over 29k.

The level of coverage in Wythe County varies depending on the part of the county. The denser areas (the eastern end of the county including Max Meadows and Austinville) have more coverage than less dense areas.

The current providers include CenturyLink and Shentel (which bought Rural Retreat Cable). Shentel offers “higher” speeds in Rural Retreat (up to 10 Mbps). The Chairman

of the BoS lives on Chapman road (the road running parallel to I-81/77 corridor (south side of Interstate) and is very dissatisfied with options and speeds available.

The Fort Chiswell/Lead Mines area is the one of greatest need. Also, the eastern end of the county is the largest growth area.

City of Galax

Galax is more dense than other areas with the planning district. Also, it is part of Wired Road and is a Regional Broadband Authority, so the businesses and residents' needs are being met for the most part.

- Big businesses include Albany Industries, Moag Industrial, Vaughn Bassett furniture company, etc. CrossRoads Facility is a business incubator, and XM Radio call center has about 150 employees.
- There are about 7,000 people over 8 square miles, so a bit denser than other areas in the planning district.
- Wired Road forced providers to upgrade and expand their networks
- Perceived positive impact on real estate (byers won't consider moving to homes without broadband)
- Important for small businesses' online sales
- Schools are seeing higher enrollments and were using Lingo, which is one of the Wired Road providers. They are now using CenturyLink.
- Galax is upgrading some cell towers to ensure reliability
- Fiber runs east up to Airport Road

The main regional service providers in Galax include:

- Comcast – up to 130 meg residential in some areas; has a retail store in downtown Galax.
- CenturyLink – up to 25 meg
- Wired Road RBA

7.2 Sources of Funding Appendix

National Funding

In December 2018, US Department of Agriculture (through RUS) announced a $600 million grant and loan Broadband Program, ReConnect, to assist with building rural broadband infrastructure. Telecommunications companies, rural electric cooperatives and utilities, Internet service providers, and municipalities may apply for funding. To be eligible, communities must have populations smaller than 20,000 people with no broadband service or where service is slower than 10/1. Loan applications are due April and May 2019, depending on the program applied for.

State Level Awards Granted

The state of Virginia, through Governor Northam, is heavily invested in the vision of equitable broadband coverage throughout the state. The Governor's vision is statewide broadband coverage within 10 years. The two agencies that have deployed the most capital to support broadband connectivity are the Virginia Tobacco Region Revitalization Commission (Tobacco Commission) and the Virginia Department of Housing and Community Development (DHCD). Part of receiving funding is a requirement that communities/localities have a "granular plan" for ensuring coverage.

Virginia Coalfield Economic Development Authority (VCEDA)

VCEDA has been involved with regional broadband expansion efforts for many years. They have been a provider of capital for the LENOWISCO Fiber-to-the-Home initiative, the Cumberland Plateau Company network expansion, and the Virginia Coalfield Coalition 4g Wireless project.

VCEDA indicated that "the more broadband deployed in the region, the more economic development is enhanced."

VCEDA identified the following communities as high potential candidates for broadband deployment:

- Haysi
- Nickelsville
- US 460 (between Richlands and Vansant)
- Hurley
- Whitewood
- Clinchco.

Regional Awards Granted

Appalachian Regional Commission (ARC)

The Appalachian Regional Commission, or ARC, believes that "access to advanced telecommunications infrastructure for all Appalachian communities is essential for the Region to reach economic parity with the nation."

ARC partners with public entities, non-profits, and the private-sector to spread access to telecommunications infrastructure and applications throughout the Region.

Specifically, ARC's POWER program is a congressionally funded initiative that targets federal resources to help communities and regions that have been affected by job losses in coal mining, coal power plant operations, and coal-related supply chain industries due to the changing economics of America's energy production. Virginia will receive 5 grants totaling more than $2.8 million as part of this program.

One of the grants will go to Bland County (in the amount of $459,764) for a 33-mile fiber build to businesses in the county. The fiber run will start in Rocky Gap, then south through Bastian, then to Bland. The fiber will run along the Route 52 corridor. Once the fiber construction is finished, an ISP partner will use wireless technology to reach additional locations off Route 52. The project will make Internet access available to 37 businesses, as well as Bland County Schools, the Board of Education offices and the Bland County Medical Clinic, a federally qualified health center.

Pending Applications at the Tobacco Commission

- Fiscal year 2019 pending last mile broadband applications to the Tobacco Commission for Southwest Virginia are outlined in the following table:

FY 2019 Last Mile Broadband - Pending Applications for SWVA

Req #	Organization	Project Title	Request Amount
3535	Carroll County Industrial Development Authority	The Wired Road/Carroll County Last Mile Neighborhood Pole Project	$200,000
3531	Cumberland Plateau Company	Cleveland Broadband Expansion Project	$544,137
3530	Grayson County	Connect Grayson	$325,000
3522	Industrial Development Authority of Dickenson County	Honey Camp Last Mile Broadband	$65,000
3519	Scott County Telephone Cooperative	Weber City Broadband Fiber-to-the-Home Initiative	$1,500,000
3525	Tazewell County Industrial Development Authority	Tazewell County Wireless Service Authority Broadband Expansion Phase III	$150,000
3527	Industrial Development Authority of Russell County VA	North Central Russell / South Buchanan Counties Broadband Expansion Project	$1,900,000
Total Potential Funding for SWVA			**$4,684,137**

Funding Strategy

Identify the highest potential providers of capital, including government and private sources, to fund the highest priority communities. Start at the regional level, then state, then national.

- Virginia Rural Broadband Planning Initiative (VRBPI)
- Connect America Fund
- Rural Utility Services
- Community Development Block Grants (CDBG)

Potential Funding Sources

The following table outlines a more comprehensive list of potential funding sources that have been identified by the Tobacco Commission.

Source	Opportunity	Brief Description	Application Timeline
State Funding Opportunities			
Department of Housing and Community Development (DHCD)	Community Development Block Grant Planning Grant http://www.dhcd.virginia.gov/index.php/community-partnerships-dhcd/79-community-development-block-grant-cdbg-planning-grant.html	Funds available for 3 areas: planning grants, local innovation grants, implementation and economic development, and large scale local level projects.	January – September
Department of Housing and Community Development (DHCD)	Virginia Telecommunication Initiative http://www.dhcd.virginia.gov/	Provides financial assistance to supplement construction costs by private sector providers to extend services to areas that are presently unserved by any broadband provider. Definition of unserved; speeds </= 10 Mbps/1 Mbps. Eligible applicants: towns, cities, counties, EDA/IDA, broadband/wireless authorities, PDC, etc.	Fall

Virginia Tobacco Region Revitalization Commission	TRRC Last-mile Grant and Loan Fund https://www.revitalizeva.org/grant-loan-program/grant-programs/research-development-grant-program/	Provides grants and loans to public/private partnerships between localities and ISPs to construct projects within its service area.	Announced annually
Virginia Resources Authority (VRA)	Virginia Pooled Financing Program http://www.virginiaresources.org/page/virginia-pooled-financing-program/	Provides financing to local governments for essential projects. All VRA's authorized project areas are eligible for financing in the Virginia Pooled Financing Program (VPFP). Since inception in 2003, over 100 local governments in Virginia have utilized this program to finance or refinance over $2 billion in infrastructure projects.	Multiple windows annually
Federal Funding Opportunities			
United States Department of Agriculture Rural Development (USDA)	Community Connect Grant program https://www.rd.usda.gov/programs-services/community-connect-grants	This program helps fund broadband deployment into rural communities where it is not yet economically viable for private sector providers to deliver service.	Announced periodically
United States Department of Agriculture Rural Development (USDA)	Rural Broadband Access Loan and Loan Guarantee https://www.rd.usda.gov/programs-services/rural-broadband-access-loan-and-loan-guarantee	This program offers financial assistance to eligible applicants that will construct, improve, or acquire facilities and equipment needed to provide service at the broadband lending speed as defined in the most recent funding announcement in eligible rural areas.	Announced periodically
United States Department of Agriculture Rural Development (USDA)	Telecommunications Infrastructure Loans & Loan Guarantees https://www.rd.usda.gov/programs-services/telecommunications-	This program provides financing for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.	Applications are accepted on a continuing basis

	infrastructure-loans-loan-guarantees		
United States Department of Agriculture Rural Development (USDA)	Distance Learning and Telemedicine Program https://www.rd.usda.gov/programs-services/distance-learning-telemedicine-grants	This program helps rural communities use telecommunications to connect to each other and to the world for the purposes of distance learning and telemedicine.	Announced periodically
United States Department of Agriculture Rural Development (USDA)	Community Facilities Direct Loan & Grant Program https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program	This program provides affordable funding to develop essential community facilities in rural areas.	Applications are accepted on a continuing basis
Federal Communications Commission (FCC)	Connect America Fund https://www.fcc.gov/general/connect-america-fund-caf CAF I, $1.5B over 10 years to 103 companies. CAF II $1.98 B over 10 years. Bidding ended 8/2018. Awards pending.	Provider funding for FCC eligible areas only. Eligible areas map: https://www.fcc.gov/reports-research/maps/connect-america-phase-ii-initial-eligible-areas-map/	No longer active for new bidders.
Federal Communications Commission (FCC)	FCC Mobility Fund Phase II https://www.fcc.gov/mobility-fund-phase-2	The FCC plans to make up to $4.53 billion in funding available to mobile operators that are building out 4G LTE networks to underserved rural markets. The funding will be made available over a 10-year period. Operators that receive the support from the auction will build out 4G LTE mobile service that will deliver at least 10 Mbps to customers in markets that lack access to unsubsidized 4G LTE.	Not yet active
Federal Communications Commission (FCC)	E-Rate Funding http://www.fcc.gov/encyclopedia/e-rate-schools-libraries-usf-program	The schools and libraries universal service support program, commonly known as the E-Rate program, helps schools and libraries to obtain affordable broadband.	Winter-Spring
Universal Service Administration Co. (USAC)	Lifeline Support https://www.usac.org/li/	Lifeline is a federal program that lowers the monthly cost of phone and Internet for eligible customers. Participating companies in Virginia: http://www.lifelinesupp	Applications are accepted on a continuing basis

		ort.org/ls/companies/CompanyListing.aspx?state=VA&stateName=Virginia	
Universal Service Administration Co. (USAC)	Rural Health Care – Healthcare Connect Fund https://www.usac.org/rhc/healthcare-connect/default.aspx	This program provides a 65 percent discount on eligible expenses related to broadband connectivity to both individual rural health care providers (HCPs) and consortia, which can include non-rural HCPs, if the consortium has a majority of rural sites.	Winter - Summer
Universal Service Administration Co. (USAC)	Rural Health Care – Telecommunications Program https://www.usac.org/rhc/telecommunications/default.aspx	This program provides reduced rates to rural health care providers (HCPs) for telecommunications services related to the use of telemedicine and telehealth.	Winter - Summer
US Economic Development Administration (EDA)	Planning Program and Local Technical Assistance Program https://www.grants.gov/web/grants/view-opportunity.html?oppId=301936	This program assists eligible recipients in developing economic development plans and studies designed to build capacity and guide the economic prosperity and resiliency of an area or region.	Applications are accepted on a continuing basis
US Economic Development Administration (EDA)	Public Works and Economic Adjustment Assistance Programs https://www.grants.gov/web/grants/view-opportunity.html?oppId=294771	Grants made under this program will leverage regional assets to support the implementation of regional economic development strategies designed to create jobs, leverage private capital, encourage economic development, and strengthen America's ability to compete in the global marketplace.	Applications are accepted on a continuing basis
Department of Education (DOE)	Promise Neighborhoods Competition http://www2.ed.gov/programs/promiseneighborhoods/index.html	This program provides funding to support eligible entities to significantly improve the educational and developmental outcomes of children and youth in our most distressed communities.	Spring
Appalachian Regional Commission (ARC)	ARC Project Grants https://www.arc.gov/funding/arcprojectgrants.asp	ARC funds a number of telecommunications activities, including strategic community planning, equipment	Announced annually

		acquisition, and hardware and software for network building. ARC funds can be used for strategic telecommunications planning activities, telecommunication service inventory and assessment activities, aggregation of demand projects, among other activities.	
Federal Reserve	Community Reinvestment Act (CRA) https://www.dallasfed.org/cd/pubs/digitaldivide.aspx	The Federal Reserve has issued guidance on how to leverage a bank's CRA resources in digital equity initiatives.	Ongoing
Tribal Funding Opportunities			
U.S. Department of Housing and Urban Development (HUD)	Indian Community Development Block Grant http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/icdbg	Provides funds to eligible grantees for housing rehabilitation, land acquisition, community facilities, infrastructure construction, and economic development activities. Eligible applicants for assistance include any Indian tribe, band, group, or nation.	Winter
U.S. Department of Housing and Urban Development (HUD)	Indian Housing Block Grant (IHBG) program http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/ihbg	The provision of broadband is eligible under this program. Eligible IHBG recipients are Federally recognized Indian tribes or their tribally designated housing entity (TDHE), and a limited number of state recognized tribes who were funded under the Indian Housing Program authorized by the United States Housing Act of 1937 (USHA).	Winter
Institute of Museum and Library Services	Native American Library Services https://www.imls.gov/nofo/native-american-library-services-basic-grants-fy16-notice-funding-opportunity	Basic Grants are available to support existing library operations and to maintain core library services. Indian tribes, Alaska native villages, regional corporations, and village corporations are eligible to apply for funding under the Native American Library Services grant program.	Spring

7.3 Addressable Market Appendix

Market Overview

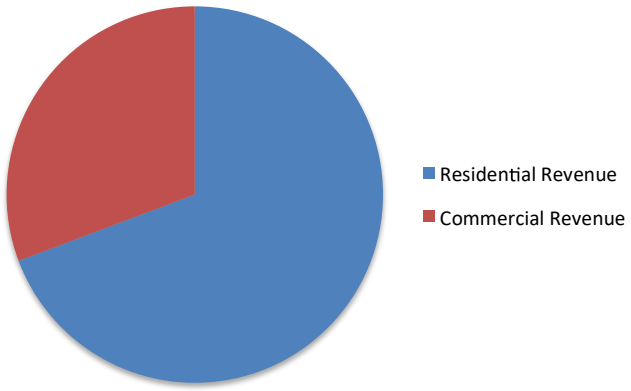
The telecommunications market in Southwest Virginia is estimated at $289 Million annually for voice, video, data, and wireless services. This estimate is based on the following key factors:

Key Economic Index Factors	SWVA Region
Residential	
Population (2018)	401,745
Households (BRASG 2018 Estimate)	84,270
Median Household Income (BRASG 2018 Estimate)	$38,945
Economic Index (Income Relative to US)	68%
Economic Index (Income Relative to VA)	56%
Commercial	
Businesses (BRASG Estimate)	7,430
Employment (BRASG Estimate)	49,423

On average, approximately 4% of household income is spent on all communication services.

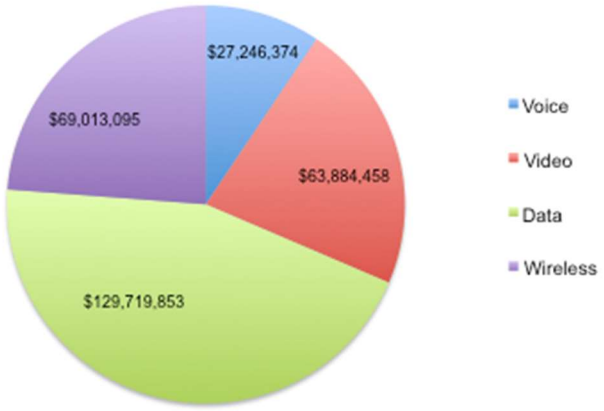
The overall market is roughly split between 31% commercial and 69% residential services.

Total Revenue – Residential vs. Commercial



By service, the revenue distribution is outlined in the following table, with broadband services driving most of the growth:

Total Annual Telecom Revenue at Year 1



The important market dynamics that will influence this addressable market are threefold:

1. **Cable TV Cord Cutting**. As wireless service becomes more reliable and ubiquitous, and as broadband becomes more available, there will be a continued defection not only from landline voice to wireless but also from cable tv to digital, a-la-carte streaming services. Cisco predicts that nearly four-fifths (79 percent) of the world's mobile data traffic will be video by 2022.

2. **Mobile Data Demand**. The explosion in mobile data demand only continues. It grew 23% in 2017 in North America. The increasing number of wireless devices and connections will continue to drive the surge in demand for wireless data.

3. **5G Technology**. The evolution of 5th Generation, or 5G, networks, holds the promise to deliver faster speeds. However, it is likely that rural areas such as Southwest Virginia may be last in line to see the carriers upgrade, as they will target the larger markets initially. A strong fiber backbone will still be needed to service the 5G network. 4G will carry most of the traffic for the next 10 years or so.

These trends will drive demand for expanded fiber and wireless-dependent services in the region, presenting an opportunity for service providers. However, the issue remains. The associated costs of upgrading networks to meet that demand is still extremely high due to the low population densities and challenging geography of the region. Regional leaders must find ways to partner with providers to bridge the gap so that their communities are not left behind.

7.4 Service Provider Appendix

Following is a brief description of the regional service providers and their capabilities:

Burkes Garden Telephone Company

Burkes Garden Telephone Company (BGTCo) is a small, investor-owned telephone company offering "triple-play" services via a fiber-optic system of approximately 72 fiber miles. The service area is tucked in the eastern edge of Tazewell County, adjacent to Bland County, Virginia. BGTCo migrated from copper to fiber over approximately two years.

The service area covers approximately 75 Sq. Miles from the top of Rich Mountain through Little Creek through Burkes Garden. The service area sits within a crater-like bowl with a mountain ridge totally surrounding the region. The customer count includes 160 full-time with as many as 185 during the summer season. Approximately 100 customers receive broadband, which equates to a take rate of 62%.

GPON and active Ethernet are utilized to serve these customers providing 15/10 Mbps service priced at $32.95/mo. There are no business customers on the system and approximately 13 or 14 customers are considered to be Amish and as such only utilize the telephone service.

Charter Communications

Charter / Spectrum is the second largest cable provider in the United States (third largest multi-channel video service provider when AT&T / DirecTV are considered) but has limited network operations in Southwest Virginia. Spectrum's local network is primarily in Buchanan and Tazewell counties, with some network in Russell County. Charter has an operational office in Richlands, with a head-end site in Cedar Bluff. Spectrum's network covers the Town of Tazewell, a good portion of Tazewell County, Grundy, and Richlands. Charter utilizes a hybrid-fiber-coaxial cable network architecture. 100 MBPS asynchronous service is Charter's standard/basic service at $44.99 per month. This price is dependent upon various bundling schemes.

Citizens Telephone Cooperative

Citizens is a regional ILEC with full-service communications offerings, including land-line telephone, VoIP, IPTV Video, web and e-mail hosting, DSL, and FTTP (Fiber to the Premise, and Business Ethernet. Citizen's serves portions of 7 counties in Southwest Virginia. Based in Floyd, Virginia, Citizens network is still 90% copper based, but they are rolling out gigabit FTTP.

There is some overlap of their services and a few counties within PDC's 1, 2, &3, including Carroll County, Grayson County, and Wythe County. Citizens' network stops at the Smyth County line. Their fiber runs from 58 to 16 (BVU/Sunset) and 221 to Sparta. They just completed a build on 221 (North) to Roanoke Co., passing over 1,000 homes with FTTH.

Century Link

CenturyLink is the incumbent local exchange carrier in many parts of the study region. CenturyLink still has their legacy network in place and have not invested in upgrading their network. As a result, customer satisfaction rates due to speed and reliability, were low across the board. The biggest complaint related to customer service and the perception of a total “lack of response.”

Comcast

Comcast is the largest cable provider in the United States (second largest multi-channel video service provider when AT&T / DirecTV are considered). Comcast operates a hybrid-fiber-coaxial system throughout the study area. Comcast is doing little in terms of upgrades, with some limited upgrades in PDC 1. In PDC 2, one respondent placed Comcast quality of service at the middle of the pack of the 5 service providers available in that area. Another respondent in the northwestern portion of PDC 2 listed Comcast as “adequate” with 4 stars. Still another official in the southwestern portion of region 3 gave Comcast high marks for quality of service.

CPC Broadband

CPC Broadband (formerly CPC OptiNet) is a subsidiary company of the Cumberland Plateau PDC. It was organized to serve Russell, Dickenson, Tazewell, and Buchanan Counties. Partnering with Bristol Virginia Utility's OptiNet division (now Point Broadband) the Company has obtained over $37 million in grant funding for the construction of 700 miles of fiber optic broadband backbone that is now serving almost 900 industrial, commercial, governmental and educational institutions in the region.

iGo Technologies

iGo, founded in 1994, is a Virginia-based Internet service company, providing wireless and fiber high speed Internet service to its customers who include residential and commercial clients, individuals and small to mid-size and large business. In 2017, iGo also began offering telephone service to its Internet customers.

iGo coverage areas include parts of Buchanan, Russell, Tazewell, Washington and Wise counties, with additional operations in Tennessee and West Virginia. iGo utilizes one VCC tower to reach unserved residents of the region.

iGo is mainly a fixed wireless provider with 6-8 towers, 520 customers, and 12 employees. Although existing customers are mostly wireless, iGo has successfully competed for USDA Community Connect grants for FTTH build outs. They are underway with a $1.78M project awarded in 2016 which will include 21 miles of fiber in the Buchanan County area north of Oakwood.

In 2017, they were awarded an additional $3.0M project for a buildup Garden Creek Rd toward Honaker. iGo was just awarded $455,581 to extend the build into Russell County and add interconnection with SCTC along Virginia Route 624.

The current build includes 468 customers passed. iGo is an essential element of solving the problem of unserved residents in the region.

Gigabeam Networks

Gigabeam Networks, a wireless Internet service provider, or WISP, provides service in Southwest Virginia, West Virginia and southeastern Kentucky. Their network is completely wireless, including the backhaul. Gigabeam is a small entrepreneurial venture owned by Michael Clemens. They have approximately 200 subscribers in Bland and utilize towers throughout the county. Their service packages include $79/mo. for 50 meg and $30 for 25 meg.

HillCom

HillCom, Inc is a family-owned wireless Internet service provider located in Dickenson County. The company started in 2016 out of necessity when a local resident was unable to access adequate Internet service but was able to create his own wireless broadband network solution. By 2017, HillCom had responded to neighbors requesting the service and grew to 20 customers. They then purchased DCWin (Dickenson County Wireless) and now have approximately 600 customers (95% in Dickenson County), with a mission to provide service to the entire county.

Most of the service requests HillCom receives are from the following areas within the county:

- Lick Creek
- Honey Camp
- Breaks

Point Broadband

Formerly BVU OptiNet, Point Broadband was organized in 2018 as the combination of Duffield-based Sunset Digital and Bristol-based BVU OptiNet. The organization is part of a family of telecommunications enterprises headquartered in West Point, Georgia called ITC Holding Company, LLC. ITC began as The West Point Telephone and Electric Company, founded in 1896. Point Broadband is in the process of an organization period, and their exact strategy is unknown. As with many other providers in the region, Point Broadband is attempting to determine how to affordably build out and maintain their network. Point Broadband is the recipient of a multi-million-dollar CAF II award for the study region including Lee County, and the Cumberland Plateau counties of Dickenson, Russell, and Tazewell.

Scott County Telephone Cooperative

Scott County Telephone Cooperative (SCTC), a local provider headquartered in Gate City, is a key player in the region. It serves 420 square miles of Scott County with some service in Tennessee. Their current service territory includes parts of Russell, Wise, Dickenson, and Lee Counties, and the City of Norton. They provide voice, video, and data Voice,

video, data, and security, primarily over a traditional copper/ILEC network but have been upgrading to eventually deploy and utilize an all fiber network to provide enhanced broadband services.

Using primarily grant funding, SCTC has upgraded about 100 miles of its network to fiber, with builds to 5 exchanges in the following areas:

- Ft. Blackmore
- Duffield
- Nickelsville
- Dungannon
- Clinchport

SCTC has approximately 7,000 access lines (about 5,000 in ILEC area and 2,000 in CLEC area). Additionally, they have about 7,000 high speed Internet customers.

Shentel

Shentel, or Shenandoah Telecommunications Company, is a publicly traded telecommunications company headquartered in Edinburg, Virginia. Shentel has digital wireless and wireline network in rural Virginia, West Virginia, Maryland and Pennsylvania. Shentel is also an affiliate of Sprint with wireless coverage in Pennsylvania, Maryland, Virginia, West Virginia, Kentucky and Ohio. It owns its own cell site towers built on leased land and leases space on these towers to both affiliates and non-affiliated service providers. Shentel has invested over $200 million in the past two years upgrading and expanding its wireless networks, primarily in rural markets. Shentel also provides fiber services to commercial and wholesale customers along its 5,641-mile fiber network across four states.

Shentel's cable segment provides video, Internet and voice services in franchise areas in Virginia, West Virginia, and portions of western Maryland and leases fiber optic facilities throughout its service area. It does not include video, Internet and voice services provided to customers in Shenandoah County, Virginia.

Shentel's wireline segment provides regulated and unregulated voice services, DSL Internet access and long-distance access services throughout Shenandoah County and portions of Rockingham, Frederick, Warren and Augusta Counties, Virginia. The segment also provides video services in portions of Shenandoah County and leases fiber optic facilities throughout the northern Shenandoah Valley of Virginia, northern Virginia and adjacent areas along the Interstate 81 corridor, including portions of West Virginia and Maryland.

Shentel has over 5,400 fiber route miles with fiber to over 325 cell sites, but with network in only Carroll and Russell counties. It has cable plant in Lebanon, Honaker, Swords Creek, Rye, Dante, Wytheville, and Rural Retreat.

Shentel does not actively purse grant funding, as they have not been very successful in the past doing so.

Wired Road

The Wired Road Authority is a collaborative effort between private sector service providers, the local governments of Grayson County, Carroll County, and the City of Galax, and the Carroll-Grayson-Galax Regional Industrial Facilities Authority (dba Blue Ridge Crossroads Economic Development Authority). Its purpose is to provide the critical enabling infrastructure to transform the regional economy into a dynamic, small business, and entrepreneurial economy. This transformation, enabled by The Wired Road and a complementary economic development focus on attracting and supporting entrepreneurs and small businesses, will allow the region's economy to spawn new businesses, generate jobs, create wealth, and protect the rural character of our region.

The Wired Road network has been in operation for over ten years and is a true public/private partnership with two service providers offering last mile services on the network. The Wired Road is an open access, fully integrated fiber and wireless regional broadband network offering "big broadband" 100 megabit and Gigabit fiber connections and multi-megabit wireless connections in Carroll County, Grayson County, and Galax.

Currently, the Wired Road is finishing a network extension which will connect fiber in Galax with fiber in Hillsville. It is also expanding its wireless coverage and constructing "community poles" to get service to areas that couldn't be reached before. Fiber Wireless Providers

The bill will allow Dominion Energy and Appalachian Power to provide or make available broadband capacity to service providers in unserved areas. It also authorizes the utility to own or lease broadband capacity equipment.

With existing infrastructure that already serves almost every resident and business in rural areas, utilities are uniquely positioned to bridge the gap between middle mile networks and last mile consumers.

References

Source data for population: Published on January 28, 2019 by the Weldon Cooper Center for Public Service Demographics Research Group https://demographics.coopercenter.org

Source data for county land area: U.S. Census Bureau, Census of Population and Housing. Land area is based on current information in the TIGER® data base, calculated for use with Census 2010.

Source: WideOpen Networks, The Wired Road, "Broadband Recommendations," April 2017, Revised, October 2017, pp. 32-34.

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Point Broadband currently has one active grant contract with the Virginia Tobacco Commission for the Cleveland Project in Russell County VA. It passes ~690 homes and has a budget of ~$1.4MM. It is scheduled to be completed by Q4 2020. Point also has a pending contract with VATI for the Davenport project. It is schedule to begin in January of 2021 and be completed by April of 2021.

Management Experience and Completed Funded Projects:

Tobacco Commission - Fiber Deployment Proof of Concept
2001
● Construction on LENOWISCO Rural Area Network (RAN)
● Proved open ditch concept for fiber collocation with public water deployments.
Tobacco Commission - Fiber Deployment Phase I
2002
● Construction on LENOWISCO Rural Area Network (RAN)
● Proved proof of concept for fiber deployments with 10 customers per mile.
● Rural fiber to the home
Tobacco Commission - Fiber Deployment Phase II – Last Mile
2003
● Construction on LENOWISCO Rural Area Network (RAN)
● Fiber Backbone Geodesic Mesh© – Phase V(b)
Appalachian Regional Commission - Fiber Deployment
2004
● Telecommunications Initiative – 400 yards to Jonesville
● Small town FTTH
Tobacco Commission – Dark Fiber Preliminary Engineering and Design
2005
● Construction on LENOWISCO Rural Area Network (RAN)
RUS Community Connect Rose Hill
2005
● Extended LENOWISCO Rural Area Network (RAN) into the Rose Hill, VA community.
Independence, VA – Blown Fiber Deployment
2006
● Construction of blown fiber optic infrastructure for the town of Independence, VA.
RUS Community Connect Ewing
2006

● Extended LENOWISCO Rural Area Network (RAN) into the Ewing, VA community.
Tobacco Commission – Fiber Deployment Phase III
2006
● Construction on LENOWISCO Rural Area Network (RAN)
● Fiber backbone Geodesic Mesh© – Phase V(b)
VCEDA Last Mile
2007
● Funded 500 last mile connections.
RUS Community Connect St. Charles
2007
● Extended LENOWISCO Rural Area Network (RAN) into the St. Charles, VA community.
Additional Backbone Build Out for LENOWISCO Inc.
2008
● Construction on LENOWISCO Rural Area Network (RAN) to extend network backbone reach
RUS Community Connect Blackwater
2008
● Extended LENOWISCO Rural Area Network (RAN) into the Blackwater, VA community.
RUS BIP Project – Transform Tennessee
2010 – 2015
● Funded backbone buildout, advanced DWDM Deployment, and 2500 last mile connections in Claiborne and Hancock Counties in TN.

2018-2019

- TNCED Grant for the Treadway Project – 1046 homes passed, project budget of $2.3MM

Mount Rogers Project Area

Red - new fiber to be constructed
Blue - existing Point Broadband backbone

Legend

Saltville
Smyth
Marion
Chilhowie
Glade Spring
Meadowview
Widener Valley
Lodi
PHASE 1
Konnarock
Damascus
PHASE 2
Sugar Grove
Crockett
Speedwell
PHASE 3
Wythe
52
77
94
Grayson
Independence
58
16
Mouth of Wilson
21
91
Sparta
10 mi
N
Google Earth
©2020 Google

Smyth County Comments

GENERAL COMMENTS:

Summary:

Comments generally criticize the Internet, arguing that it is too slow, too expensive, and unreliable. Many express a sense of urgency for improved service and are willing to participate in this change. Citizens recognize that broadband is necessary to expand in the area and ensure the locality does not fall behind (e.g. health, education, work, personal life) in the Commonwealth. Many citizens argue that they are unserved because they live in rural areas. Citizens demand more internet service provider options in Smyth County. Here are comments made by citizens living and working in Smyth County:

Examples:

- Faster internet is imperative to succeed in the 21st century.
- We need a reliable, faster connection instead of the satellite connection we have now. Satellite internet is the ONLY one available where we live at the moment and frankly it is horrible, but beggars can't be choosers unfortunately.
- Our Road doesn't have access to cable at all so until that is fixed I don't see how we can have faster internet. They say it is too expensive even though there's about 40-50 houses on the road.
- We need more options. CenturyLink's phones [do not meet expectations] and their internet is not any better. Service is not reliable.. there are times we get bumped off then messes up what we are doing. I've tried for 3 months to get Xfinity down here...we have about 25 houses down our road.. Xfinity comes up Hwy 16 and and stops at the Ellis house with the solar panels.. then once you cross the mountain Sugar Grove has Xfinity. Why they don't just finish this road and the rest of the houses up 16 is crazy. We've used Hughes net and that is so expensive and they have a cap on speed.. and it's not dependable either. Really Centurylink's our only option and still that is isn't reliable. We use VoIP...sometimes that acts funny
- I want affordable, high-speed internet.
- I want to video chat with my grandkids
- We need a reliable, faster connection instead of the satellite connection we have now. Satellite internet is the ONLY one available where we live at the moment and frankly it is horrible, but beggars can't be choosers unfortunately.
- We would love to have the same opportunity everyone else has in our community. Everyone should be able to have it. It would help our area and help keep jobs here plus our families. Thank you and God Bless

Smyth County Comments

EDUCATION COMMENTS:

Summary:

Of the respondents, there is an emphasis on continuing and professional education in the community. School-aged children need quality broadband to complete assignments and research at home, while adults need to engage in job training and take college courses online. Without the ability to use the Internet for continuing education, a workforce is hindered and professionals feel they must move out of the County to seek education and career opportunities.

Examples:

- Latency is poor with satellite internet, I cannot work from home as is. Online companies require a reliable, high speed landline in order to work for them. Routinely consider moving to a town with much higher internet options. Having faster internet will encourage white collar workers to move to the area and help stimulate the local economy.

- Our DSL service is very unreliable and runs at less than ".5 (one half) Mbps" which is much too slow for doing many online activities. When our school aged children are required to do online work for school they often cannot complete that work from home and either go to our church or local library both of which are in town and have much faster internet service. Faster internet would greatly improve the educational and work opportunities for those in under served rural communities.

- It would be awesome to have affordable and reliable internet connection for my needs for online education and for my son for his needs with his school work thank you for the option to participate in this survey

- The unreliability of my current service is the greatest problem and it is extremely frustrating, especially with regards to online educational pursuits.

- There are many other job created opportunities if I could have better service. Obtaining a Master's degree by attending classes is not possible with my current job situation. If I and my husband had more reliable internet service, we very likely would take advantage of continuing education.

- Our internet is very slow, I'm in college to better myself and sometimes the internet does not want to work especially if I have to take a test at home. We can't always access our Netflix or Disney+ which my smaller kids like to watch.

BUSINESS COMMENTS:

Summary:

Many respondents reported that they are unable to work from home (telework) with their current connection. This contributes to residents traveling out of the locality to work; some have even considered moving in order to access more reliable broadband. Respondents have even suggested that they are willing to pay more for the service if there is an alternative option for broadband available.

Examples:

- I work from home in the evenings and it takes hours to put my work into the computer due to satellite Internet and rural area.
- Our home & business are located in Smyth County even though we have a Rural Retreat address. We have DSL through telephone co @house but none at the business location. Faster service & lower cost internet would benefit our business & personal needs greatly
- I would like to work from home if we had faster Internet. It is always buffering.
- As a Senior Consultant that works in the IT field and my wife who is a Family Physician in Marion, VA we both do a lot of work from home. I am afforded the opportunity to work from home two days a week and those two days a week are stressful due to the lack of decent service from CenturyLink. My wife and I both like to stream Disney +, ESPN, NetFlix, Hulu and quite frankly the [less than desirable] service that CenturyLink offers does not allow us to both work and our kids to watch any of the streaming services that we pay for. In Rich Valley we do not have any options for TV service other than Satellite and we only have Satellite or CenturyLink for internet service. My wife and I are willing to pay that last mile charge if we could get the Comcast or Point Broadband service. We would also consider having VoIP for working if we had the service to support it.
- If we are able to launch the business that we set out to launch, we must have more reliable internet service. Every time we have a cloudy day, rain, or snow, our internet is sketchy or out entirely.
- Latency is poor with satellite internet, I cannot work from home as is. Online companies require a reliable, high speed landline in order to work for them. Routinely consider moving to a town with much higher internet options. Having faster internet will encourage white collar workers to move to the area and help stimulate the local economy.

PUBLIC SAFETY COMMENTS:

Summary:

Public safety is a concern amongst respondents. Reliable broadband is essential to ensure quick and efficient response times. High quality broadband helps enhance public safety responses. This, in turn, aids in increasing the demand for houses in Smyth County.

Examples:

- My fiancé is a real estate agent and needs access to better Internet to better assist her customers. It increases the safety of people in our area. And our children wont be left behind due to slow connections for their schooling.
- The schools need better Internet for instruction as well as safety reasons.
- We are in desperate need of reliable Internet for multiple reasons. Number 1 is safety.

- I am elderly with a medical alert. My phone only seems to work properly with dry weather. My daughter and son in law often come to help and they need the internet for work. It would be greatly beneficial.

HEALTHCARE COMMENTS:

Summary:

Telehealth enables people to leverage healthcare resources online, in the comfort of their own homes. This saves patients time and money by minimizing commute times and expenditures – in addition to avoiding wait rooms full of sick people. Another benefit of telehealth is that it can open access to a larger number of doctors with the experience needed to treat specific patient needs. Many doctors also rely on devices to monitor certain patient conditions, but this is only as useful as the quality of broadband connectivity. Unfortunately, without reliable broadband, residents cannot take full advantage of this option.

Examples:

- My grandmother has heart problems and drives to Cleveland Ohio to the heart doctor and they wanted to be able to track her heart and all that kind of stuff through WiFi but we don't get WiFi and it would be a great thing to have for her health.

- There will be home based learning that cannot be done through our current provided service, I also have medical devices that need a high speed connection for my doctors to communicate preventive measures