

Digging into Danger: Broadband Installation Damage in Minnesota

In 1998, a crew installing broadband cable for high-speed internet in downtown St. Cloud struck a gas line. The resulting explosion killed four people, destroyed six buildings, and caused \$400,000 in damage.^[1] More than 25 years later, too little has changed. In March of 2024, broadband drilling performed just blocks away from the 1998 explosion site struck an underground phone line, requiring an emergency repair.^[2]

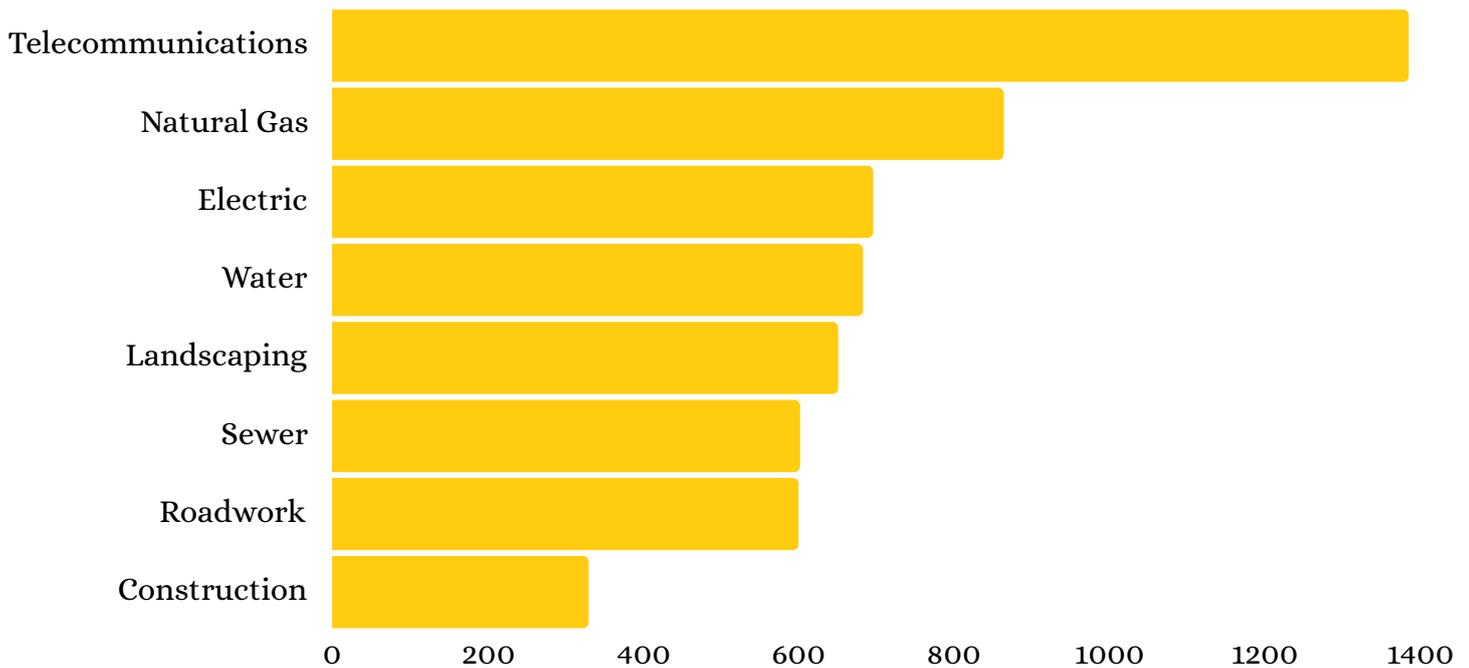
This brief explores the prevalence of such damage to underground utilities caused by telecommunications installation in Minnesota. Five central themes emerge:

- **Underground telecommunications installation is a leading cause of damage to buried infrastructure in the state.**
- **Underground telecommunications installation is damaging essential lines with potentially dangerous consequences.** The lines most frequently hit by telecommunications installation include natural gas and electric infrastructure, along with existing telecommunications lines.
- **Telecommunications installation accounts for the lion's share of damage attributable to directional drilling.** When focusing on directional drilling work alone, the share of damage caused by the telecommunications industry grows even larger.
- **The full scope of damage caused by underground telecommunications installation is unclear.** While the data reported here are worrisome, it is unlikely that this data is comprehensive, meaning that the true extent of damage caused by telecommunications installation in Minnesota is not known.
- **Investment in broadband deployment will grow significantly over the next five years, creating greater risk to underground infrastructure.** With a large influx of federal assistance, the pace of broadband installation is about to accelerate in Minnesota. In order to reduce the damage caused by broadband installation, actions need to be taken now.

Telecommunications installation is a leading cause of damage to underground utilities

In Minnesota between 2020 and 2022, buried utility infrastructure was damaged 7,440 times.^[3] As Figure 1 shows, the installation of broadband, cable TV, and other telecommunications lines was responsible for nearly 20% of that damage (1,385 strikes total), making it the leading cause of damage by a substantial margin.^[4]

Figure 1. Source of Damage to Buried Infrastructure in Minnesota, 2020-2022

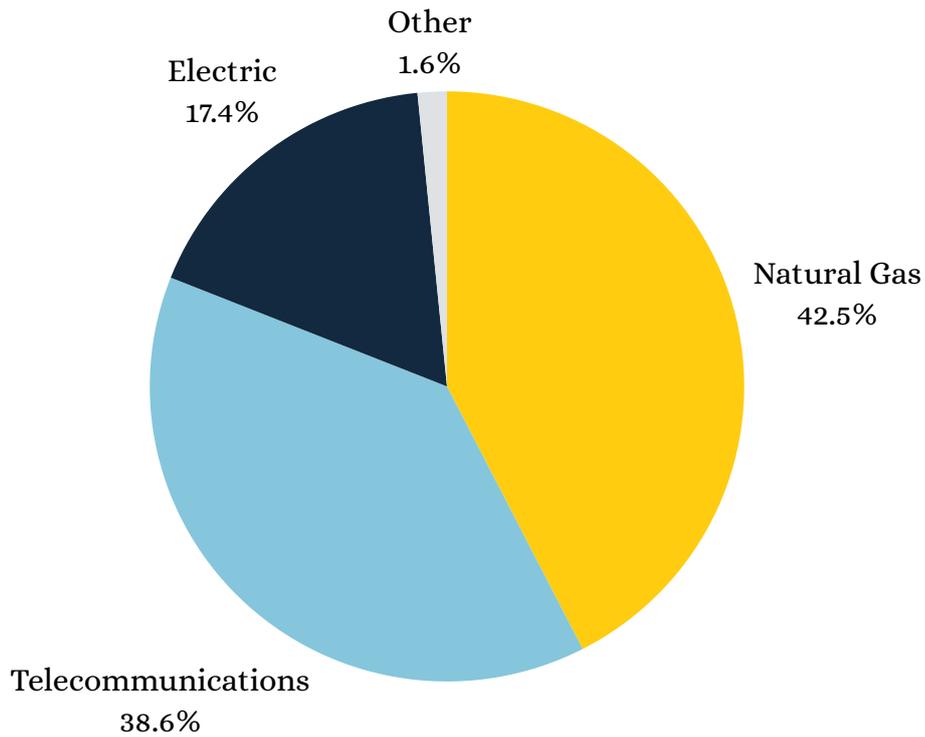


With 1,385 instances of damage over the last three years, the telecommunications industry is averaging 1.27 strikes to underground infrastructure per day in Minnesota.

Underground telecommunications installation is damaging essential lines with potentially dangerous consequences

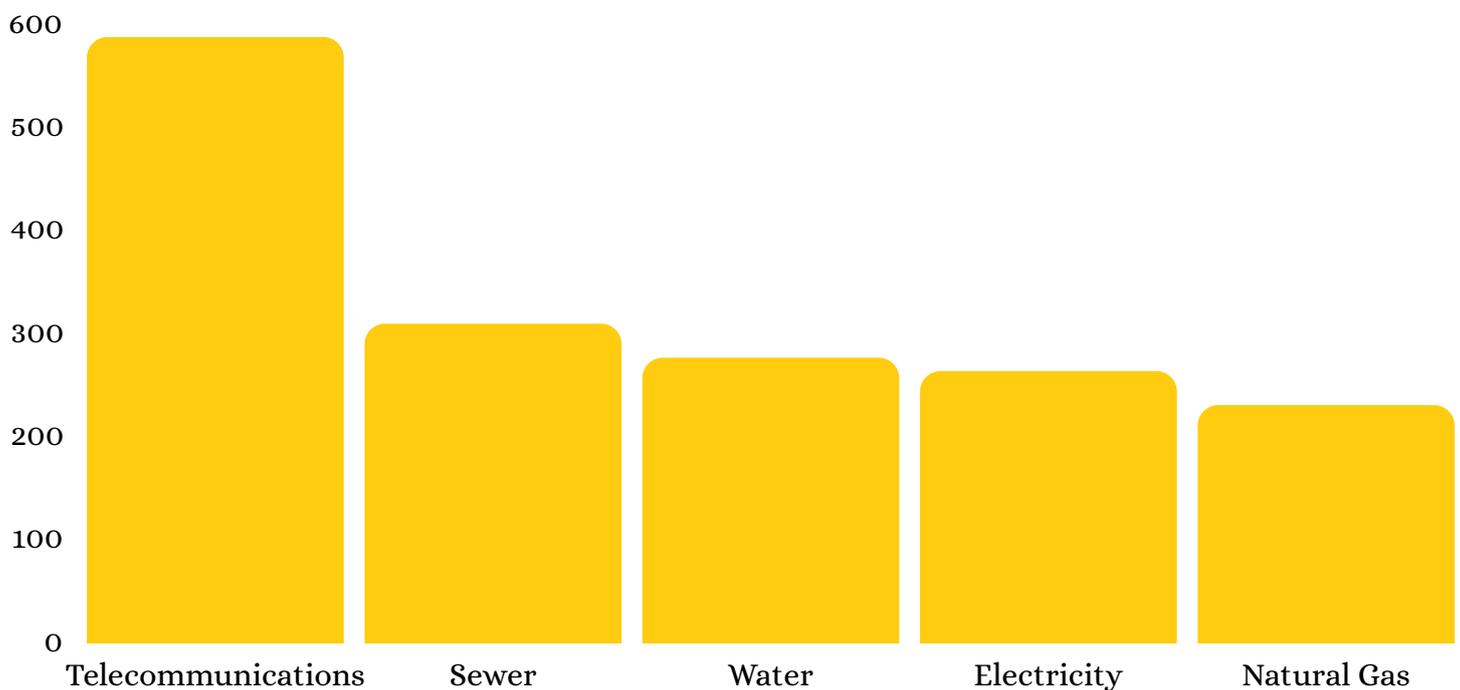
When telecommunications installation operations hit underground lines, the damage generally occurs to infrastructure that is essential for the lives of Minnesotans, and that poses a danger to public safety when struck. Natural gas was the most common object of telecommunications damage, with 588 hits recorded between 2020 and 2022 (42.5% of all damage). Electric lines were struck 241 times (17.4%) during the installation of telecommunications infrastructure, while telecommunications-on-telecommunications strikes accounted for 534 damage incidents (38.6%).

Figure 2. Infrastructure Damaged by Telecommunications Installation in Minnesota, 2020-2022



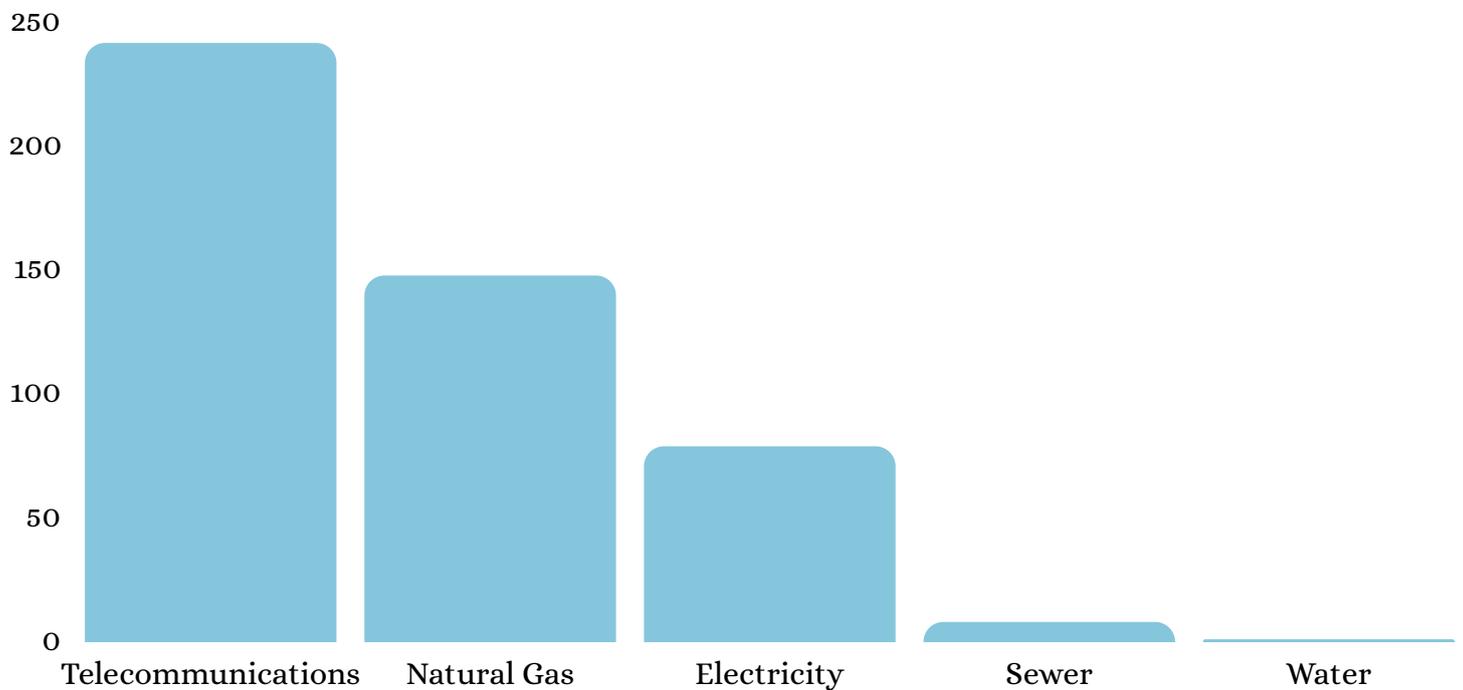
Underground telecommunications installation stands out as the most frequent source of damage to both natural gas and electric lines in the state. Among the 3,254 times that natural gas was hit in the state between 2020 and 2022 in which the cause of damage was known, telecommunications installation was the culprit in 18% of cases (588 strikes), accounting for nearly twice as much damage as the next greatest source. Telecommunications installation was responsible for 34% of the damage to electric infrastructure in the state (242 of 720 strikes to buried electrical lines).

Figure 3. Work Performed During Damage to Natural Gas Infrastructure in Minnesota, 2020-2022



Each of these strikes not only jeopardizes essential services but also creates safety risks, as demonstrated by the previously mentioned case in St. Cloud that resulted in four deaths. A similar case of broadband installation striking a natural gas line in 2018 in Sun Prairie, Wisconsin led to the death of a volunteer firefighter.^[5] While less obviously dangerous, striking telecommunications lines can also lead to public safety complications. For example, in August of 2023, broadband installation contractors severed the main and backup lines supporting Nebraska’s 911 call system in two separate incidents, leading to the loss of 911 access for 60% of state residents for 12 hours.^[6] These stories exemplify the danger that comes from allowing the current level of damage to continue.

Figure 4. Work Performed During Damage to Electric Infrastructure in Minnesota, 2020-2022



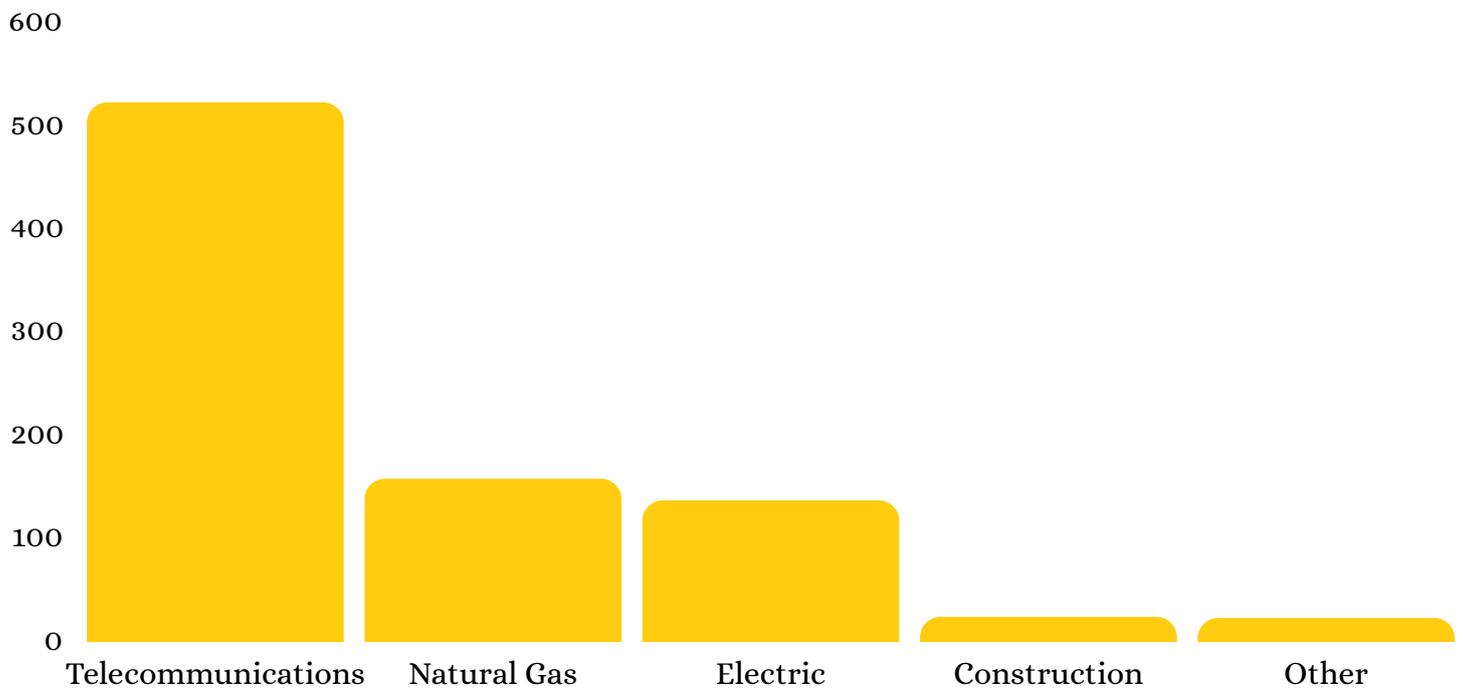
Telecommunications installation accounts for the lion’s share of damage attributable to directional drilling

Underground electric, gas, and telecommunications lines are often installed by means of Horizontal Directional Drilling, a construction technique that is designed to minimize disturbance and damage to the surrounding environment. Electric and gas distribution contractors regularly employ directional drilling to install conduits and pipelines without damaging underground infrastructure. Unfortunately, telecommunications contractors, which rely heavily on directional drilling, have a poor track record of deploying what should be a safe technology.

57% of telecommunications technicians said they saw safety risks for workers and the public, according to a recent national survey.[\[7\]](#)

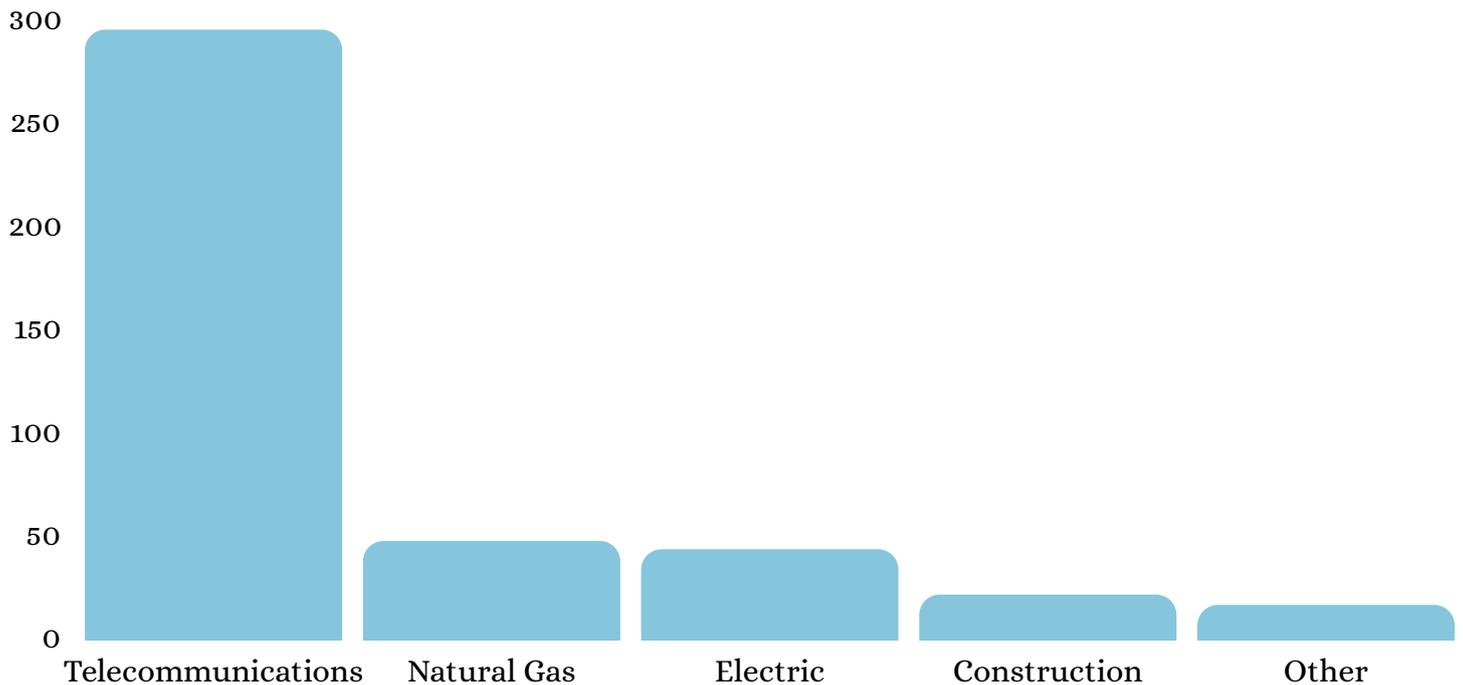
Analysis of DIRT data shows that the telecommunications industry caused a remarkable 60% of all damage from directional drilling between 2020 and 2022 – accounting for nearly twice as many damage incidents as electric and gas utilities *combined*.[\[8\]](#) Telecommunications installation was responsible for 523 damage incidents in its directional drilling, as seen in Figure 5. By contrast, directional drilling for the installation of natural gas and electric lines accounted for 158 and 137 damage incidents, respectively.

Figure 5. Work Performed During Drilling Damage in Minnesota, 2020-2022



When this analysis is further narrowed to the damage done to natural gas pipelines, the telecommunication industry’s share of directional drilling damage jumps to 70%. Here, telecommunications drilling strikes outnumber the instances of damage associated with the installation of natural gas or electric lines by a factor of six.

Figure 6. Work Performed During Drilling Damage to Natural Gas Infrastructure in Minnesota, 2020-2022



The full scope of damage caused by telecommunications is unclear

The data presented above relies exclusively on the Common Ground Alliance’s (CGA) DIRT Data Dashboard. The Dashboard provides access to the most comprehensive dataset on digging damage in the US. While serving as the best source of analysis, the DIRT data rely on information that is provided voluntarily by underground utility operators. Moreover, the data is plagued by many unknowns. For example, the cause of damage to telecommunications infrastructure in Minnesota is reported as unknown in 27% of cases, making it difficult to know the full extent of who is striking lines in the state.

“The telecommunications industry views damages as a cost of doing business.”
Telecommunications Executive[\[9\]](#)

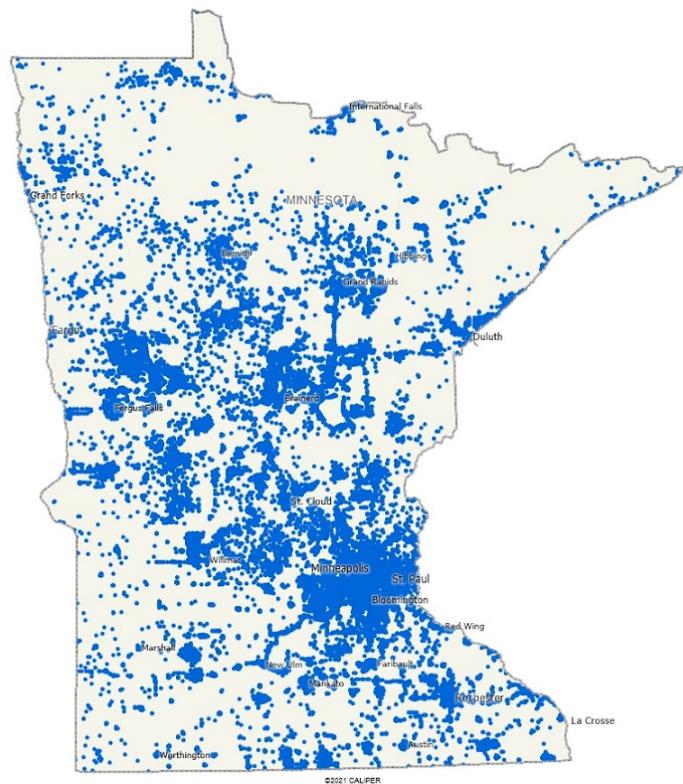
Similar data limitations exist for Minnesota state agencies. There is no requirement that damage to telecommunications infrastructure be reported to the Minnesota Office of Pipeline Safety (MNOPS). Moreover, even in industries where damage must be reported, such as when natural gas lines are struck, MNOPS does not collect information on the industry responsible for the damage. As a result,

there is no state data source indicating who is responsible for hitting natural gas infrastructure. Such limitations make it difficult to know the full extent of damage caused by broadband installation.

Investment in broadband deployment will grow significantly over the next five years

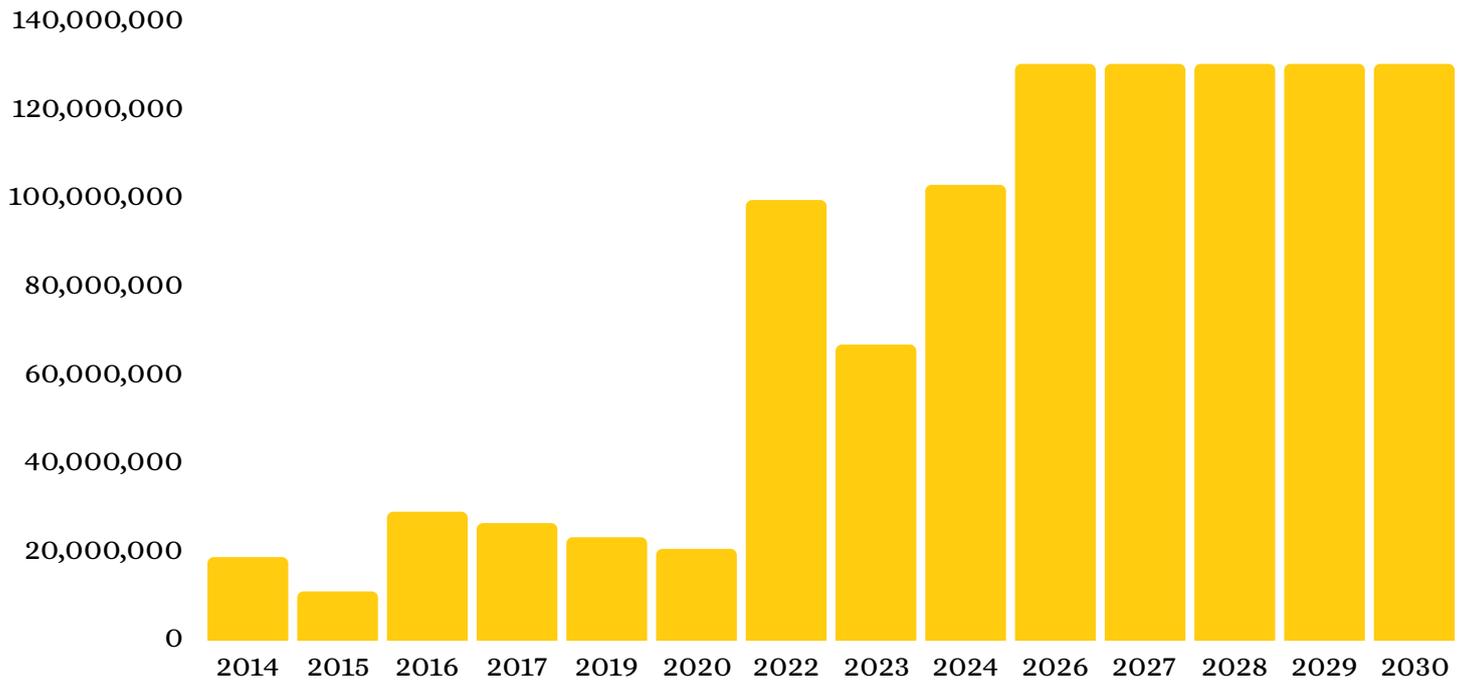
The Border-to-Border Broadband program started in Minnesota in 2014. Over the last 10 years, this program has invested nearly \$350 million to provide internet access to residents across the state, representing roughly \$35 million per year.^[10] Demonstrating the breadth of this effort, Figure 7 provides a map of the approximately 63,000 dig permits utilized for broadband installation in 2023. This work is being done in every corner of Minnesota.^[11]

Figure 7. Map of Broadband Dig Permits in Minnesota, 2023



While already substantial, the amount of broadband installation is set to accelerate. Through the Infrastructure Investment and Jobs Act, the Biden Administration has promised an additional \$652 million to Minnesota to support further development of broadband infrastructure.^[12] This money will begin assisting installation in 2026 and needs to be spent by 2030, meaning the state must spend a bit more than \$130 million per year over five years to expand high-speed internet access. Notably, that total only reflects federal investments and does not include any additional money that has been or may still be allocated by the state.

Figure 8. Past and Predicted Spending on High-Speed Internet Installation in Minnesota



This tremendous jump in funding, as shown in Figure 8, highlights the increased level of work that is set to begin in the state, suggesting that any problems Minnesota has witnessed with broadband installation in the recent past are likely to be magnified substantially in the coming years unless changes are made. If high-speed internet access is going to be expanded to Minnesotans in a way that does not simultaneously jeopardize their safety, the time to enact meaningful reforms is now.

Notes

[1] Jenny Berg, “The explosion that shook St. Cloud: 20 years later,” *SCTimes*, October 3, 2019, <https://www.sctimes.com/story/news/local/2018/12/06/st-cloud-downtown-explosion-20-year-anniversary-courthouse-toms-bar-bookems-ballentis-howies-death/2131517002/>.

[2] For the original broadband dig ticket, see <https://mn.itic.occinc.com/mnrecApp/ticketSearchAndStatusView.jsp?enc=izLYvQqI6UxTT6e6W9fp7wEBmEebq%2F8ZyyaXyRx%2Bgljr8EE2iHyi1nZlKAOIRKrK>. The emergency repair ticket can be found at <https://mn.itic.occinc.com/mnrecApp/ticketSearchAndStatusView.jsp?enc=2gQA7c0cF4Vg9FSp3Mpo0gEBmEebq%2F8ZyyaXyRx%2BglgqkiEp5SehCMwXrmmOsLUX>.

[3] All data on buried infrastructure damage is taken from the Common Ground Alliance’s DIRT Interactive Dashboard, found at <https://commongroundalliance.com/DIRT-dashboard>. The 7,440 refers to the number of damages in which the source of the damage was known, as this analysis is specifically focused on the causes of damage. If instances of damage in which the source was not known are also included, the total rises to 9,587.

[4] In this analysis, our use of the “telecom” includes broadband, cable, telephone, and other telecommunications infrastructure which are categorized in DIRT data as “Telecommunications” or “Cable TV.”

[5] Parker Schorr, “Digging blind: Wisconsin allows drillers to flout state law - sometimes with deadly results,” *The Cap Times*, April 22, 2020, https://captimes.com/news/local/digging-blind-wisconsin-allows-drillers-to-flout-state-law-sometimes-with-deadly-results/article_a600c2ed-cdda-5b87-9d23-646332d7b4b0.html.

[6] Dan Crisler, “Nebraska Public Service Commission investigates 911 outages,” *Omaha World-Herald*, January 4, 2024.

[7] *Communication Workers of America*, “AT&T’s web of subcontractors: Building next generation networks with low-wage labor,” October 2020, <https://cwa-union.org/sites/default/files/20201005attsubcontractorreport.pdf>, page 1.

[8] The analysis for drilling damage focuses on incidents in the DIRT Dashboard where the equipment type is identified as “boring”, “directional”, or “drilling”. Incidents in these categories are combined for the purposes of this analysis.

[9] *Common Ground Alliance*, “Telecom’s critical role in reversing utility damage trends,” December 2023, <https://commongroundalliance.com/Portals/0/CGA%20Telecommunications%20White%20Paper%202023.pdf?ver=2023-12-07-183006-553>, page 5.

[10] Stats on annual Border-to-Border Broadband Program spending shown in Figure 7 are pulled from the Funding Summaries provided at <https://mn.gov/deed/programs-services/broadband/grant-program/>.

[11] Data source: Gopher State One Call dig ticket data, reflecting all “fiber” work done in 2023, <https://www.gopherstateonecall.org/>.

[12] “Infrastructure Investment and Jobs Act (IIJA),” *Minnesota Department of Employment and Economic Development*, <https://mn.gov/deed/programs-services/broadband/infrastructure/>.