

Title 13 Amendments

Amending Engineering Standards to
Allow Micro-Trenching



Micro-Trenching

Title 13 of City Code
Regulates Construction
and Infrastructure within
Public Right-of-Way and
Easements



- What is Micro-Trenching
 - A narrow, shallow trench cut into existing pavement to install conduit and fiber optic cable
 - Primarily located at the joint between curb and asphalt



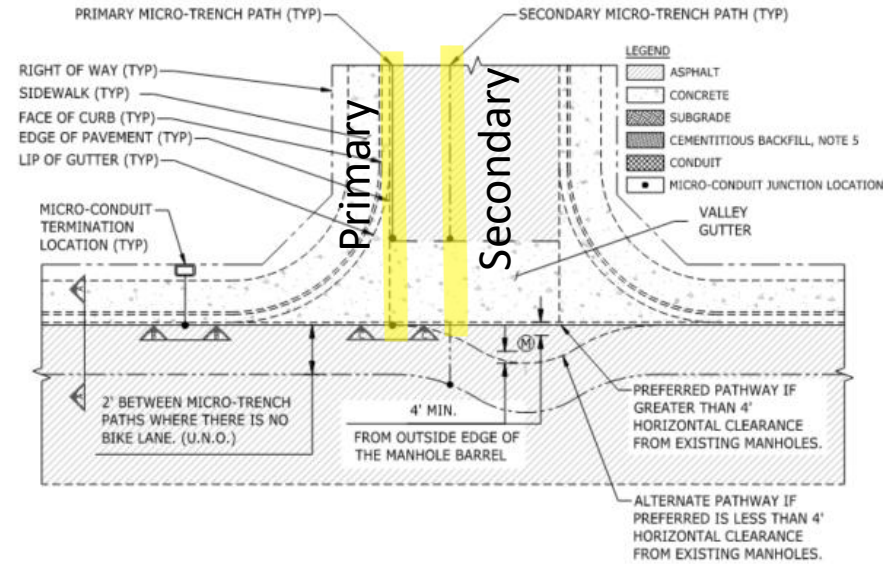
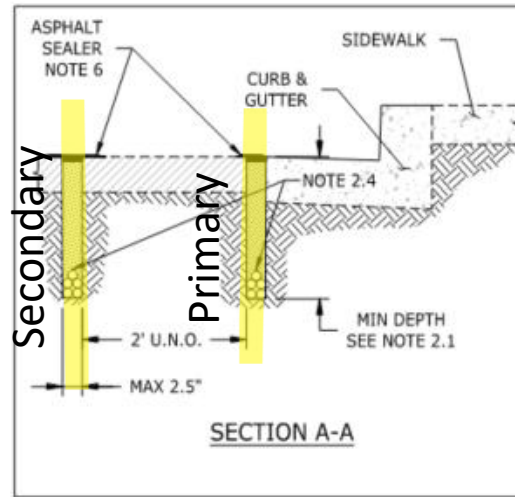
Micro-Trenching

City of Flagstaff Trench Detail and Surface Patch

Up to 2.5" wide

12" deep in local roads

16" deep in collector roads



Micro-Trenching

- Small Diameter Conduit Protects Fiber
- Flush-Mount Surface Splice Box
- Slurry Trench Backfill
- Mastic overband patch (cold climate rated)



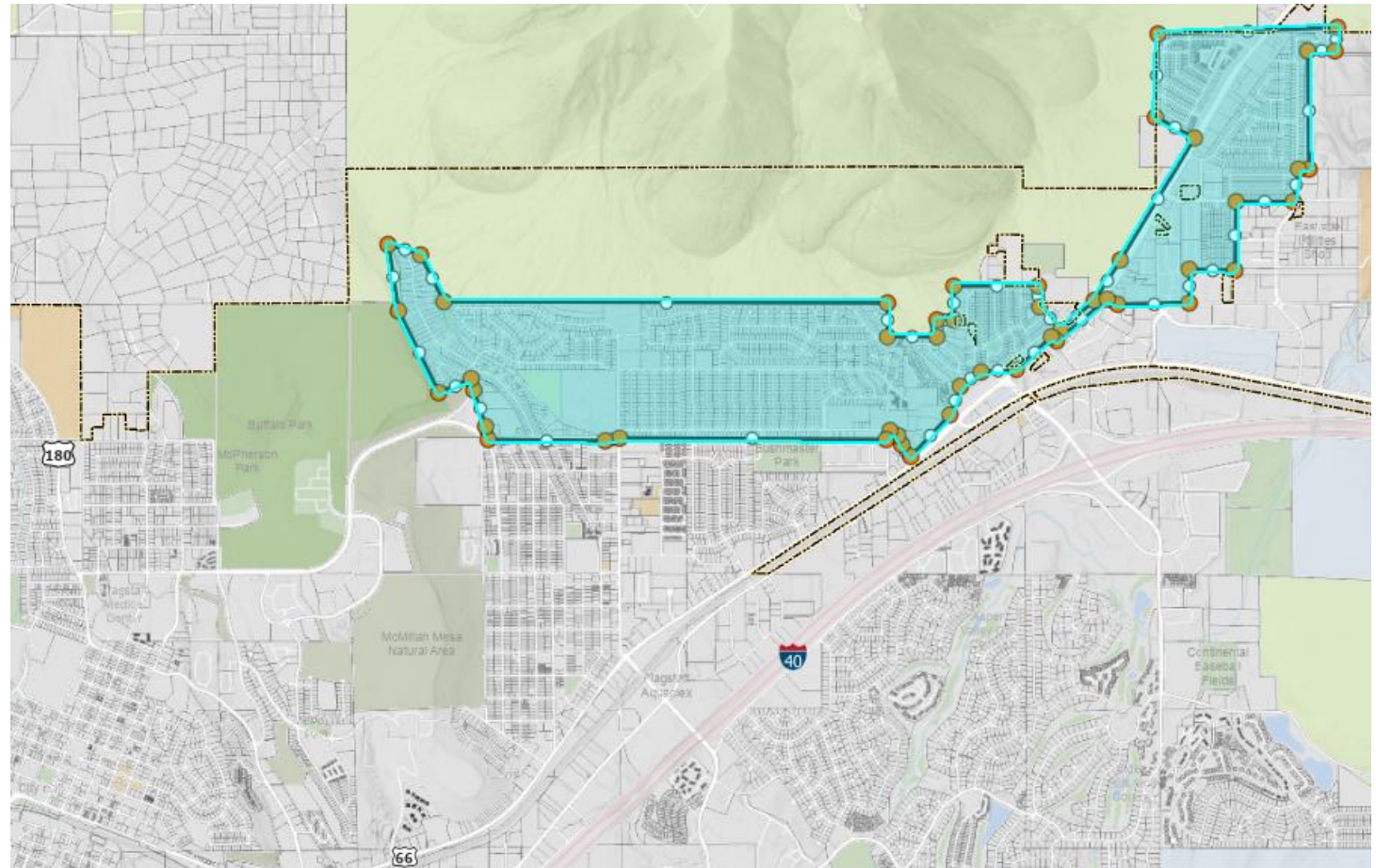
Pilot Project

- Conducted spring & summer 2025
- Upon adoption of these standards, micro-trenching may be utilized by all fiber providers



Pilot Project Area

Shadow Mountain, Grandview, Swiss Manor, Upper Greenlaw, Mobile Haven, Mt Elden Foothills, Smokerise & Christmas Tree Estates





Pilot Project Construction





Pilot Project Finished Conditions

Typical finished micro-trench condition residential street



Finished trench with pothole patch at utility crossing



Finished trench with utility and stormwater crossings





Pilot Project Finished Conditions

Larger Vaults located at periodic splice points ordinarily behind curb or sidewalk



Smaller service junction boxes at property corners





Public Outreach and Feedback

- **These proposed standards were distributed to local representatives of existing providers, posted to City website and noticed via press release.**
- **Attached feedback expressed the following concerns:**
 - **Provider desire to increase number of concurrent permits beyond the 5 proposed**
 - **Provider concern relating to depth below frost line and uniform permitting standards**
 - **One provider indicated they currently have no plans to utilize this method based on previous experience in Maricopa County.**



Micro-Trenching Benefits

- **Reduced Disruption:** Smaller cuts can minimize impact on traffic, businesses, and residents.
- **Faster Installation:** Shorter construction timelines compared to traditional trenching or directional boring.
- **Lower Costs:** Less excavation, material removal, and pavement restoration required.
- **Shallower Excavation:** Avoids conflicts with many existing service lateral crossings.



Micro-Trenching Risks

- **Surface Integrity:** Even well-sealed cuts can weaken pavement structure compared to intact asphalt/concrete. Pothole locating of all existing utility crossings require additional asphalt removal
 - Mitigated by preferentially locating at existing curb joint.
- **Durability Concerns:** Mastic overband surface patch may fail or require increased maintenance
 - Mitigated by provider responsibility for trench and surface patch integrity until a re-pave or overlay of the affected street.
- **Newer Technology:** Experience with the long-term durability of this method is limited compared to open trenching or directional boring.



Community and Staffing Impacts

- **Rapid Deployment:** There will be staff and community impacts from widespread simultaneous projects.
 - Simultaneous large footprint and fast-moving projects require City Engineering staffing to process permits, manage community impact and inspect public infrastructure. Water Services staff are required to mark existing utility locations ahead of this work. This workload may strain staff project management, inspections and utility locate availability.
 - Larger simultaneous project footprint along with other unrelated projects will impact the community resulting in additional simultaneous traffic and neighborhood impacts.
 - Staff will request mid-year staffing addition for an additional Project Manager and Construction Inspector.

Questions?



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