

Public Power Benefit - Fiber Expansion Update

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Why We're Here Today

- Objective:
 - Highlight Fiber Expansion Public Power Benefit (PPB) progress
- Agenda:
 - Overview of Fiber Distribution Towers (FDT) 142 & 122 (Chumstick)
 - Overview of Fiber Distribution Tower (FDT) 178 (Manson)
 - Fiber Expansion Program, Delivery Key Takeaways from 2021

FDT 142 & 122 (Chumstick)

Project Metrics - Lit Premises When Complete - 359

FDT 142 (143 prems)

- 31,500 linear feet of aerial fiber (~ 6 miles)
- 13,700 linear feet of underground fiber (~ 2.6 miles)

FDT 122 (216 prems)

- 27,900 linear feet of aerial fiber (~ 5.3 miles)
- 13,100 linear feet of underground fiber (~ 2.5 miles)

Distribution Infrastructure:

- NESC Compliant System
 - Fire hardening up the Little Chumstick, 1 mile undergrounded
 - Wildlife protection on all pole stations
 - Poles moved out of roadway clear zone

How does 142 & 122 (Chumstick) compare with FDT 178 (Manson)

- **19%** more aerial fiber to be placed
- **48%** more underground fiber to be placed

FDT 142 & 122 (Chumstick)

Current Estimate At Completion = \$2,767,892

Fiber Infrastructure, part of the PPB funds paid for by Fiber Business Unit (BU):

- FDT 122 - \$852,980
 - Average spent per premise lit ~ \$3,949
- FDT 142 - \$1,109,944
 - Average spent per premise lit ~ \$7,762
- Average spent per premise lit (122 & 142 combined) ~ \$5,468

Distribution Infrastructure, not part of the PPB funds:

- Overhead (OH) \$582,337
- Underground (UG) \$222,631

All in expansion cost per lit prem = \$7,710. Does not include the estimated ~ \$1,500 per service drop.

FDT 142 & 122 (Chumstick)

Project Budget – Why the need for a system revision?

- Unlike Manson 178, an existing design was in place
- Determined it would be necessary to redesign the tower
 - The existing design was dated with older numbers that had not recognized inflation
 - The existing design did not include all the work needed to fully light the tower
- Execution of Chumstick in 2021 has utilized unit price contractors over District crews to build
 - This approach typically comes with a higher cost (District vs. Contractor)
 - Crew availability was the key driver in shifting from PUD Crew to Contractor Crew delivery
- Key Takeaways:
 - Land rights is still a crucial part of being able to serve fiber in the expansion areas
 - Having the same team from inception to completion offers the most efficient and effective delivery option for a tower

FDT 142 & 122 – Chumstick Photo Album

Project Delivery – Chelan County PUD





















FDT 178 (Manson)

Project Metrics - Lit Premises - 187

Fiber Infrastructure:

- 49,979 linear feet of aerial fiber installed (~9.5 miles)
- 18,131 linear feet of underground fiber (~ 3.4 miles)

Distribution Infrastructure:

- NESC Compliant System
 - 219 make ready pole stations (pole replacements, cross arms, guying and rearrangement)
 - 6,770 linear feet of new duct installed (~1.28 miles)

FDT 178 (Manson)

Actual Costs at Closeout = \$1,891,899

Fiber Infrastructure, part of the PPB funds paid for by Fiber Business Unit (BU):

- \$640,389
 - Average spent per premise lit ~ \$3,425

Distribution Infrastructure, not part of the PPB funds:

- OH - \$944,418 ~ \$4,300 per distribution structure
- UG - \$307,092 ~ \$45/LF of underground distribution infrastructure installed (This is good!)

All in expansion cost per lit prem = \$10,117. Does not include the estimated ~ \$1,500 per service drop.

FDT 178 – Manson Photo Album

Project Delivery – Chelan County PUD



















Fiber Expansion Highlights

- Re-Tooling the Districts Unit Price/Doc Crew Contracts
- Project Risk Identification
 - Land Rights, Materials, Personnel Resources
- Project Critical Path Re-Informed
 - Route map → Real Estate Services Land Right Research/Acquisition → Design → Construction
- Project baseline Re-Informed
 - GIS Query updated

Fiber Expansion Key 2021 Takeaways

- New GIS dynamic land rights tool has been developed to assist construction staff of where land rights exist and where land rights are needed
- Updated actual costs that inform project budget estimating for new towers