FILED
02/28/19
04:59 PM

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California.	Investigation 17-06-027
And Related Matter.	Rulemaking 17-06-028

WORKSHOP REPORT FILED BY SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR WORKSHOPS HELD NOVEMBER 15, 2018 AND JANUARY 22-23, 2019

FADIA RAFEEDIE KHOURY
GLORIA M. ING

Attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-1999
Facsimile: (626) 302-6693
E-mail: Gloria.Ing@sce.com

Dated: **February 28, 2019**

WORKSHOP REPORT FILED BY SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR WORKSHOPS HELD NOVEMBER 15, 2018 AND JANUARY 22-23, 2019

TABLE OF CONTENTS

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

Order Instituting Investigation into the Creation of a Shared Database or Statewide Census of Utility Poles and Conduit in California.	Investigation 17-06-027
And Related Matter.	Rulemaking 17-06-028

WORKSHOP REPORT FILED BY SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR WORKSHOPS HELD NOVEMBER 15, 2018 AND JANUARY 22-23, 2019

I.

INTRODUCTION

Pursuant to Rule 1.8(d) of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission") and the August 8, 2018 Assigned Commissioner's Scoping Memo and Ruling, as modified by Administrative Law Judge Robert Mason's ruling on January 28, 2019, Southern California Edison Company ("SCE") respectfully files this Workshop Report for the workshops held on November 15, 2018 and January 22-23, 2019. The joint parties that participated in the workshops and created the report are: AT&T;[1] Bear Valley Electric Service ("BVES"), a division of Golden State Water Company; the California Association of Competitive Telecommunications Companies ("CALTEL"),[2] California Cable and Telecommunications Association ("CCTA"); Charter Fiberlink-CA-CCO, LLC and Time Warner Cable Information Services (California) LLC (collectively referred to herein as

[1] Pacific Bell Telephone Company, d/b/a AT&T California, AT&T Mobility (AT&T Mobility Wireless Operations Holdings, Inc., New Cingular Wireless PCS, LLC, and Santa Barbara Cellular Systems, Ltd) and AT&T Corp. are collectively referred to herein as "AT&T."

[2] CALTEL members are certificated competitive local exchange carriers ("CLECs") that primarily provide voice and broadband services to residential and business end user customers in California.

"Charter"), California Municipal Utilities Association ("CMUA"); Comcast Phone of California, LLC ("Comcast"); Cox Communications California, LLC; the Commission's Electric Safety and Reliability Branch of the Safety and Enforcement Division ("SED Advocacy");[3] Crown Castle Fiber, LLC;[4] ExteNet Systems (California) LLC; Frontier;[5] PacifiCorp d/b/a Pacific Power; Pacific Gas and Electric Company ("PG&E"); the Public Advocates Office; San Diego Gas and Electric Company ("SDG&E"); Southern California Gas Company ("SoCalGas"); Southern California Edison Company ("SCE"); the Small LECs;[6] Sprint[7] and Verizon. In addition, several non-party entities also participated in the informal workshops held January 22-23, 2019 in San Francisco.

II.

REGULATORY AND PROCEDURAL BACKGROUND

A. Background of the Proceeding

On July 10, 2017, the Commission issued an Order Instituting Investigation I.17-06-027 ("OII") into the possible creation of a shared database or statewide census of utility poles and conduit in California. The OII was opened in conjunction with Rulemaking R.17-06-028 (collectively "OII/OIR") in order to consider: strategies for increased and non-discriminatory

---

3 Commission staff from SED's Utility Risk Assessment Branch, Energy Division, and Communications Division participated on an advisory basis in the workshops and in preparation of this workshop report.

4 Crown Castle Fiber, LLC and Sunesys, LLC are collectively referred to herein as "Crown Castle."

5 Citizens Telecommunications Company of California d/b/a/ Frontier Communications of California, Frontier Communications of the Southwest Inc., and Frontier California Inc. are collectively referred to herein as "Frontier."

6 The Small LECs are the following carriers: Calaveras Telephone Company, Cal-Ore Telephone Co., Ducor Telephone Company, Foresthill Telephone Co., Happy Valley Telephone Company, Hornitos Telephone Company, Kerman Telephone Co., Pinnacles Telephone Co., The Ponderosa Telephone Co., Sierra Telephone Company, Inc., The Siskiyou Telephone Company, Volcano Telephone Company, and Winterhaven Telephone Company

7 Sprint Communications Company, L.P., Sprint Spectrum L.P., and Virgin Mobile USA, L.P. (collectively, "Sprint").

access to poles and conduit by competitive communications providers; the impact of such increased access on safety; and how best to ensure the integrity of the affected communications and electric supply infrastructure going forward.[8] Regarding the OII, the Commission said it would investigate the feasibility of a data management platform that would allow stakeholders to share key pole attachment and conduit information.[9] The OII/OIR was followed by the issuance of an Assigned Commissioner's Scoping Memo and Ruling dated August 8, 2018 ("ACR"), which, among other things, set forth the category, issues, schedules and other matters related to the scope of Phase I of the OII. The ACR also ruled on a joint motion to set collaborative workshops.[10] While the ACR denied the Joint Motion, without prejudice, the ACR stated: "I do not mean to suggest that interested parties may not meet among themselves in order to discuss the issues identified in this Ruling and, where they determine to be appropriate, prepare joint filings with the Commission.[11]

The ACR went on to emphasize the scope of Phase I as an information gathering phase of the OII/OIR proceeding and presented a Use Case proposal.[12] Additionally, the ACR established that the Commission would hold a workshop with the purpose of presenting the potential Use Cases, initiating dialogue, and collecting input and feedback to refine the Use Cases and match the data fields critical for the defined uses. In two subsequent ALJ Rulings,[13] the Commission scheduled the OII Phase I Workshop for November 15-16, 2018.

In light of the ACR's previously highlighted statement, an informal group of pole and conduit owners and attachers engaged in a series of informal meetings from September to November 2018 to discuss the issues raised in the OII and the ACR, share information and

---

8 OII/OIR at 1.
9 *Id*.
10 ACR at 5-6.
11 ACR at 6.
12 Parties provided comments on September 8, 2018 and reply comments on October 31, 2018.
13 *See* September 12, 2018 E-mail Ruling Revising the Schedule in the ACR and October 15, 2018 Ruling inviting Reply Comments and Adjusting the Schedule regarding Upcoming Workshop.

perspectives, and consider possible paths forward regarding pole and conduit information sharing. Those meetings culminated in a draft Joint Parties' Proposal for the OII, which was outlined in a PowerPoint presentation[14] that was presented jointly by some participants in the informal group at the Commission's November 15, 2018 workshop.[15] The second day of the planned November 15-16 workshop was cancelled due to a U.S. Environmental Protection Agency's declaration of hazardous air quality levels.[16] As a follow-up to the shortened workshop, the informal industry group of pole/conduit owners and attachers held a two-day public workshop on January 22-23, 2019. An invitation to participate was extended to the entire OII/OIR service list and Commission staff.

B. Summary of November 15, 2018 Workshop

Commission Staff scheduled two days of workshops for November 15 and November 16, 2018. The November 15, 2018 workshop proceeded as planned. As mentioned above, due to very unhealthy air quality levels in the San Francisco Bay Area, the second day of the workshop was cancelled by Commission Staff. During the November 15 workshop, a PowerPoint presentation[17] was utilized to facilitate topical discussions.

During the course of the workshop, the participants considered OII Proceeding goals and objectives, problems the proceeding aimed to solve, and issues that might arise in pursuing a statewide database or other software solution. Commission President Michael Picker provided opening remarks describing California State Legislature expectations related to infrastructure data.

---

[14] *See* Appendix C.
[15] The PowerPoint presentation did not represent a consensus view on all issues.
[16] S*ee* Assigned Administrative Law Judge's Ruling Revising Schedule for Order Instituting Investigation dated January 28, 2019 at 1.
[17] *See* Appendix B.

As the planned agenda progressed, meeting organizers modified the agenda to allow earlier presentation of an industry coalition proposal and demonstration. Consequently, Commission Staff did not present on cost/benefit, cost effectiveness, and cost recovery.

Commission Staff presented the software development life cycle model as a potential problem-solving process that parties could utilize. By examining use cases, defining high-level requirements, and performing a technical gap analysis, Commission Staff and parties could have the necessary information for determining the tools and technology needed to meet functional requirements of pole/conduit owners, and attachers, and Commission Staff. Participants shared feedback regarding pursuit of short term or longer-term solutions.

A pole/conduit owner and attacher group comprised of a subset of participants presented a preliminary draft presentation based on a series of meetings held in the Fall of 2018, consistent with the ACR which encouraged pole/conduit owners and attachers to meet among themselves (*see* Appendix C). Entities who did not have the opportunity to participate in these meetings requested that the Commission allow opening and reply comments related to the pole/conduit owner and attachers' group proposal.

PG&E presented its Joint Use Map and Portal ("JUMP"). JUMP is an application that provides users with access to PG&E's maps and other relevant pole data.

The November 15 workshop was adjourned early to provide entities additional time to develop additional use cases for presentation and discussion the following day. The November 15, 2018 Workshop session was recorded and is available in the Commission's video archive at: http://www.adminmonitor.com/ca/cpuc/workshop/20181115/.

C. Summary of January 22-23 Workshop

As described above, during the workshop held on November 15, 2018, an informal industry group of pole/ conduit owners and attachers delivered a presentation that proposed a phased approach and path forward regarding access to pole and conduit information. During subsequent discussions, a recommendation to expand the small group discussions to

other interested parties emerged. On December 21, 2018, the informal industry group notified parties via email that supplemental workshops would be held at PG&E's Energy Center in San Francisco on January 22-23, 2019, with the intent to discuss the industry group's phased approach regarding pole and conduit information and address related data-access matters stemming from the November 15 workshop. An initial draft workshop agenda was transmitted to parties on January 8, 2019, and a revised agenda was transmitted on January 15, 2019, along with a copy of the industry group's original presentation and a link to the video record of the November 15 workshop.

1. Workshop Day 1

Following a safety briefing by PG&E and self-introductions by parties and other participants attending in person and via the web-ex, the facilitator reviewed the agenda and led a group discussion on the purpose and intended outcome of the workshop. ExteNet made a presentation (Appendix F) describing its business and the necessity of making pole attachment data and conduit data available electronically. Following ExteNet's presentation, attendees reviewed the industry group's Track 1 proposal to seek feedback from the smaller IOUs and the POUs, and to seek to resolve non-consensus items. After the Track 1 discussions, attendees discussed and sought feedback on the matter of the Commission's access and monitoring of pole and conduit information. Certain Commission staff members in attendance offered comments and potential scenarios for the use of pole and conduit information, as well as comments on information describing how and by whom the pole and conduit portal is being utilized and could be useful to staff. There was also discussion regarding the desire for expeditious access to whatever pole attachment and conduit data is currently available electronically (in whatever format) with access to a more formalized database or other platform for attachment and conduit data to follow. Commission Staff discussed the meaning of the term "spatial" used in Use Case#1. Various parties also expressed a wide range of concerns including data integrity, confidentiality, necessity, presentation, and completion of Tracks 1, 2, and 3 (described further

below in Section III). The California Department of Forestry and Fire Protection ("CAL FIRE") liaison to the Commission discussed poles, conductors, and locations of poles with non-exempt equipment as related to emergency response, de-energization, and the Public Resources Code. Attendees closed the day with a brief discussion of Use Case #1 (Maintain Accurate and Comprehensive Pole & Conduit Asset Inventory in Spatial Database).

2. Workshop Day 2

After the safety briefing and recap of Day 1, parties briefly discussed underground/conduit data and the challenges of relying on historic records and maps, and other challenges related to field verification of surplus conduit in electric utility systems. Comcast made an oral presentation describing its processes for obtaining information about poles that may be available for new attachments, and in particular, its frequent use of PG&E's JUMP application. The ensuing discussion touched on several points of concern by CLECs and cable companies, some of which are already being addressed by the larger IOUs and ILECs and intended to be addressed formally in Track 1, with other matters possibly being addressed in Tracks 2 and 3.

Commission Staff inquired about using opportunities like the PG&E Field Asset Inventory project to collect and record information about all the communication attachments in the communication space.

After the lunch break, parties discussed the pole attachment and conduit data that could be addressed in Track 2 and Track 3, and concluded with a discussion of possible "next steps."[18] Parties agreed that it was important to continue the dialog among the pole and conduit owners and attachers, and that additional guidance and authorization from the Commission was needed to move forward with the development of a formal work plan and the formation of working groups.

---

[18] CALTEL presented its list of desired data on conduit structures, although the list was not discussed in detail during the workshop. (*See* Appendix G.)

Twenty-six entities participated in the workshop process, including SED, electric and gas IOUs and POUs, communications companies, cable providers, and industry associations. The list of participants represented in the workshops is provided as Appendix H.

The workshops included the following presentations, which are provided as appendices to this Workshop Report:

APPENDIX	DESCRIPTION
A	I.17-06-027 Pole OII Phase I Workshop - November 15, 2018 – Agenda
B	I.17-06-027 Pole OII Phase I Workshop - November 15, 2018 (CPUC Staff Presentation)
C	Pole Owner/Attacher Group Presentation Examining Database-Related Issues (original)
D	January 22-23, 2019 Workshop – Agenda
E	Pole Owner/Attacher Group Presentation Examining Database-Related Issues (revised w/ highlighted workshop notes)
F	ExteNet Systems (California) LLC Presentation
G	CALTEL Track 3 Presentation
H	List of Workshop Participants

A draft of this Workshop Report was circulated to all workshop participants who are parties to the proceeding for review and comment prior to its submission.

III.

PROPOSED TRACKS FOR THE DEVELOPMENT OF ACCESS TO UTILITY POLE AND CONDUIT INVENTORY

A. Track 1

Track 1 of the Workshop Proposal generally consists of electronic access to pole data, either by attachers or by Commission staff. Track 1 generally is the same as what was described as "Phase 1" of the Joint Parties' Proposal presented at the November 15, 2018 Workshop, but with the addition of functionality that will allow monitoring of pole data by Commission staff.

These data points were discussed in consideration with Use Case #8 (Facilitating Non-Discriminatory Access and Enhancing Competition). As discussed at the workshop, Track 1 consists of the following:

Within one year of a Commission order, the major pole owners (AT&T, Frontier, PG&E, SCE, and SDG&E) must make the following pole data available in electronic format, either in real time or within one business day:

- Unique identifier of pole
- Pole location information (e.g., GIS coordinates and/or address)
- High fire threat district and tier category
- Pole length, class, and material
- Pole installation date
- Name of any other joint owner(s); percentage ownership of each joint owner(s)
- Intrusive test data: date of last test and test result
- Number of pending attachment application(s) (if any) and/or make-ready work (if available)
- Notice of any pending pole replacement/reinforcement and date (if available)
- Buddy pole info: identification of incomplete pole transfer situation, date of second pole install, identification of parties with attachments on old pole (if available).

There was limited discussion among the parties regarding the 'one-year' and 'one business day' timeframes. However, during the discussion, it became apparent that the major pole owners likely would satisfy the electronic access obligation by providing an electronic portal to their pole data. A portal would allow real-time access, thereby rendering the timeframe issue moot. The Track 1 Technical Working Group will clarify these issues.

The parties also discussed several data items that were identified as non-consensus items in the Joint Parties' Proposal at the November 15, 2018 Workshop. After additional discussion, no party in attendance on January 22 expressed objection to the data set listed above as a starting point. The Track 1 Technical Working Group will further refine this data set.

There was discussion among the parties regarding what form of Commission pole data monitoring functionality should be included within Track 1. For example, should monitoring consist of providing Commission access to the pole owners' databases via a portal, regularly-generated reports of pertinent pole data responding to specific inquiries from the Commission, or some combination of these? The parties discussed various uses the Commission could make of the pole data, but the issue was not resolved during the workshop. The Track 1 Technical Working Group will work with Commission Staff to address this issue.

The parties discussed which pole owners are prepared to participate in Track 1. The larger IOU pole owners in attendance did not express objections to meeting the Track 1 obligations within one year of a Commission order. However, some of the other pole owners in attendance indicated that a one-year timeframe could be technically problematic and/or burdensome for their companies. The parties discussed the concept of allowing smaller investor-owned pole owners additional time to permit electronic access to their pole data. The Track 1 Technical Working Group will explore this issue.

B. Track 2

The primary objective of Track 2 is to add the critical pole attachment information that provides clearer insight into a pole's safety, available capacity, and available physical space for access. At a high level, the Track 2 fields as proposed include Electric Attachments, Communications Attachments, and Supporting Info (such as guys and anchors). Parties discussed that the industry would benefit from a clear understanding and ranking of criticality and purpose as was done for Track 1 data sets for specific types of attachments (such as primary vs. secondary vs. service drops).

The Track 2 proposal also seeks to include Special Load Cases and notice of any pending attachment application. Parties discussed adding an indicator for "exempt" vs. "non-exempt" equipment as related to Public Resource Code vegetation clearing requirement.[19]

Finally, the Track 2 work plan is intended to include clarified definitions, expectations, and alternatives for Data Integrity, Providing Secure Access, and Cost Considerations. The parties discussed the possibility of the work on Track 2 proceeding in parallel with work on Track 1. The workshop parties discussed a rough outline of Workgroups that would form to finalize the work plan and industry position on the above topics:

- Further Subgroup Definition – a workgroup that effectively forms quickly and early in the process to brainstorm/confirm all of the right workgroups have been identified, and add more if necessary;
- "Who and When?" – Who does Track 2 apply to and when will it be required to be complete?;
- "How, What, and Why?" – How will the work be accomplished, including the housing of the data, presumably more extensive than Track 1 data? What does each company's product look like? Why is it required or what specific purpose will such gathered and maintained data serve?;
- Identify Additional Use Cases and Prioritize Use Cases;
- Data Integrity – define "accuracy" expectations, how often is data kept up-to-date, define how various data points would be flagged with high or low "confidence levels";
- Legacy Data Collection Options;
- Confidentiality / Cyber Security; and
- Cost Sharing / Cost-Benefit Analysis

---

[19] *See*: http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fppguidepdf126.pdf.

C. Track 3

Track 3 of the Workshop Proposal addresses conduit data and related access issues. Participants expressed varying views regarding what priority conduit access should receive. Suggestions ranged from a recommendation that all tracks could proceed on a parallel timeline providing equal priority to each, while others contended that conduit data is a separate and complex undertaking that should be addressed after pole-related data issues are considered. Workshop participants also discussed the availability of conduit data, and the accessibility of that data to third parties seeking access. Some contended that conduit access was primarily an issue for communications provider-owned conduit and not generally an issue for electric utility conduit. Finally, unlike Tracks 1 and 2, about which parties developed detailed discussion points and identified some points of agreement, no similar discussion was held, or discussion points developed for conduit. However, one industry participant, CALTEL, developed its own list of desired access data points related to conduit access that was briefly displayed on-screen. Though not discussed in detail by participants at the January 22-23 workshops, the conduit data points submitted by CALTEL are attached as Appendix G.

IV.

RECOMMENDATIONS/NEXT STEPS

Workshop participants discussed creating working groups to develop detailed requirements for Track 1, Track 2 and Track 3. Key features of a work plan would include, but may not be limited to, the following:

1) Goals and objectives;
2) How work will be accomplished;
3) Milestones and oversight/steering of planned work;
4) Data requirements (and justifications);
5) Accessibility and security of pole/conduit data;
6) Data collection, accuracy, and management/monitoring; and

7) Implementation process, procedures, and timeline

Matters related to the foregoing list and discussed at the January workshop included: flexibility for implementation for smaller IOUs and ILECs; the need for working groups and smaller task groups to address data integrity; legacy data collection; confidentiality/cyber security; cost sharing; and creation of separate working groups for Tracks, 1, 2, and 3 that could work in tandem.

To oversee the progress of track development and ensure consistency in the working groups' endeavors, a Steering Committee could also be established. Parties are encouraged to comment on a work plan, related elements, and a calendar to develop a Track 1 work plan.

V.

ACKNOWLEDGEMENTS

The parties wish to thank PG&E for hosting the second workshop meeting in January 2019. The parties also thank the Workshop Report team, with members from the CPUC, AT&T, CCTA, Comcast, PG&E, SCE, for producing this report and special thanks to all workshop participants for their willingness to address the various issues identified in this proceeding in a good faith manner and engage in open, direct dialogue.

Respectfully submitted,

FADIA RAFEEDIE KHOURY
GLORIA M. ING

/s/ Gloria M. Ing
By: Gloria M. Ing
Attorneys for
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770
Telephone: (626) 302-1999
Facsimile: (626) 302-6693
E-mail: Gloria.Ing@sce.com

February 28, 2019

Appendix A

I.17-06-027 Pole OII Phase I Workshop - November 15, 2018 – Agenda

Nov. 15, 2018 I.17-06027 Workshop Agenda

SECTION	TIME	DURATION	WORKSHOP AGENDA TOPIC (DAY 1)
1	9:30 to 9:45 a.m.	15 minutes	Introductions
2	9:45 to 10:00 a.m.	15 minutes	Proceeding's Goals & Objectives
3	10:00 to 10:30 a.m.	30 minutes	Problems the Proceeding Sets out to Solve
4	10:30 to 11:00 a.m.	30 minutes	Which Issues Will We Face in Pursuing a Statewide Database?
5	11:00 to 11:30 a.m.	30 minutes	Cost-Benefit/Cost-Effectiveness/Cost Recovery
6	11:30 a.m. to Noon	30 minutes	Software Development Life Cycle Model
7	Noon to 1 p.m.	1 hour	LUNCH
8	1:00 to 3:00 p.m.	2 hours	Informal Industry (Pole-Owner & Pole-Tenant) Group Presentation Examining Database-Related Issues
9	3:00 to 3:15 p.m.	15 minutes	BREAK
10	3:15 to 4:00 p.m.	45 minutes	PG&E Joint Use Map & Portal Demonstration
11	4:00 to 4:30 p.m.	30 minutes	Summarize Day 1 and Discuss Next Steps for Day 2 of the Workshop

Appendix B

I.17-06-027 Pole OII Phase I Workshop - November 15, 2018

(CPUC Staff Presentation)

I.17-06-027 Pole OII Phase I Workshop

Commission Staff

California Public Utilities Commission

11/15/2018

Day 1 Agenda

	TIME	Topic
1	9:30 to 9:45 a.m.	Introductions
2	9:45 to 10:00 a.m.	Proceeding's Goals & Objectives
3	10:00 to 10:30 a.m.	Problems the Proceeding Sets out to Solve
4	10:30 to 11:00 a.m.	Which Issues Will We Face in Pursuing a Statewide Database?
5	11:00 to 11:30 a.m.	Cost-Benefit, Cost-Effectiveness & Cost Recovery Issues
6	11:30 a.m. to Noon	Software Development Life Cycle Model
7	Noon to 1:00 p.m.	LUNCH
8	1:00 to 3:00 p.m.	Informal Industry (Pole-Owner & Pole-Tenant) Group Presentation Examining Database-Related Issues
9	3:00 to 3:15 p.m.	BREAK
10	3:15 to 4:00 p.m.	PG&E Joint Use Map & Portal Demo
11	4:00 to 4:30 p.m.	Summarize Day 1 & Day 2 Next Steps

OII Goal

- Order Instituting Investigation (OII) into the Possibility of Creating a Shared Statewide Database or Census of Utility Poles and Conduit in California to ensure the safety of the utility infrastructure and Californians.

Problems the Proceeding Sets out to Solve

- Inadequate management of poles, attachments & conduit
  - Adequate Oversight over Poles is Difficult
    - Overloaded poles and/or insufficiently maintained attachments may have caused fires & other accidents.
    - Commission currently does not conduct an *ex ante* safety review of proposed pole attachments for pole loading or other safety issues.
- Incomplete pole attachment and equipment data
- Inadequate sharing of pole/conduit & related data with pole/conduit owners, attachers and regulatory agencies

Problems the Proceeding Sets out to Solve

- Rulemaking addresses competitive bottlenecks and barriers to entry, including lack of access to poles, conduit and other network infrastructure and may raise prices for some telecommunications services

- Need for better data to address challenges posed by Utility *Conduits* under Public Streets and in Public Utility Easements
  - Underground facilities can flood, causing prolonged disruption of emergency services and they can themselves be the sources of fire, injury, and/or death.

5

Which Issues Will We Face in Pursuing a Statewide Database?

Questions to consider include how to build and implement a database, and alternatively, are there other methods to ensure the safety of the utility infrastructure and the safety of all Californians.

6

Database Challenges

- Buy-In Concerns
- Security Concerns
- Data Accuracy Concerns
- Other Database Concerns
- These Concerns Depend on…

Buy-In Concerns

- What other stakeholders need to participate
  - Small ILECs
  - Non-IOUs who own poles
  - Joint Pole Authorities
- Lack of involvement in this process
  - Prohibitive cost to participate in proceedings
  - Lack of comprehensive records of owned poles
  - Do not want, nor have the obligation, to allow attachment to poles or connections to conduit (Small ILECs)
- How to motivate these other parties' involvement
  - What actions can parties and the CPUC take
  - Should we require the involvement of these other stakeholders

Security Concerns

- Parties have stated concerns that a database could allow malicious actors access to critical and confidential infrastructure information
  - How open to access should the database(s) or portals be and to who
  - What strategies could be used to maintain security and safety while allowing access

Data Accuracy Concerns

- How could the database(s) be made as accurate as possible?
  - What responsibilities would attachers and pole owners have to keep the database accurate?
  - If there are disputes in accuracy, how are they resolved?
  - What standards of accuracy should be used?
- How to ensure that database and field inspections complement each other.
  - Field inspections will still be necessary.
  - Should the database contain detailed conduit information and how could it be gathered and verified easily?

Other Database Concerns

- Who will manage the database?
- How long would a database take to set up?
- How would it be paid for?

These Concerns Depend On…

- The Structure of the Database(s)
  - What data will be included.
  - What access would utilities need.
- The Participants in the Database
  - Can we get buy-in from all necessary parties?
  - Would some participants need help maintaining their databases?
  - What current databases could be shared now between attachers and pole owners?

Cost-Benefit, Cost Allocation and Cost Recovery: An Overview

- Background
- Parties' Concerns about Cost & Time
- Recommendations to Lower Costs
- Parties' Disparate Views on Cost Allocation
- Parties Opinions on Cost Recovery

13

Background

In Phase 2, Stakeholders will examine:

- Comparison of alternatives
- Cost-benefit evaluation
- Cost allocation, cost sharing options
- Cost recovery

14

Parties' Concerns About Cost & Time

- Creating and populating a comprehensive pole and conduit database would be a time-consuming endeavor of potentially mammoth cost.
- A statewide "asset inventory in (a) spatial database" (Use Case #1) would be prohibitively costly, time-consuming.
- A survey to confirm precise conduit locations and details would arguably be cost prohibitive, considering that determining precise locations could require excavation.
- Incorporating pole and conduit repair and replacement plan data could impose costly and redundant obligations on users.

15

Recommendations to Lower Costs

- The Commission should identify and implement "low-hanging fruit" solutions that improve access to existing data such as access to intrusive pole test data within a timeframe.
- The Commission should consider relying on existing pole-owner databases where practical.
- The goal is to develop a cost effective database(s) or web portal, relying on existing sources of information where possible.

16

Parties Hold Disparate Views on Cost Allocation

- Who Benefits and Who Should Pay
- How Would Costs be Allocated
- Rate Regulation
- Consumer Impact

Parties Illustrate Some Cost Sharing Methods

- Organization Membership models could distribute the costs among member organizations and restrict database access to members only.
  - The Southern California Joint Pole Committee assigns its members a portion of previous month's operating expenses plus a percentage of the member's non-usable pole space.
  - Oregon Joint Utility Association charges members annual dues based upon the amount of owned and rented poles each member has.
  - NJUNS uses a membership model where paying members split the cost to sponsor the program within a state.
- Costs for developing a pole and conduit database system could reflect each entity's use of the database based on time or number of queries.

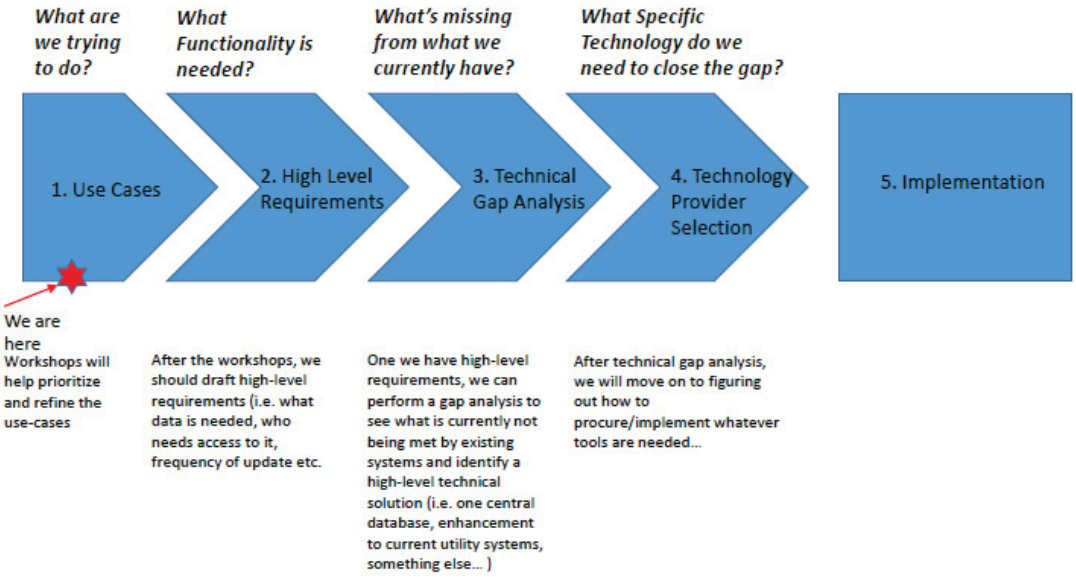
Parties Opinions on Cost Recovery

- Should the Commission address cost recovery before moving forward with a database(s) or web portal?
- Should the Commission confirm if utility related costs should be collected from ratepayers?
- Should the Commission consider authorizing the collection of costs from customers via a balancing account?

Closing

- Parties have articulated significant concerns about cost in the record thus far.
- Phase 2 will focus intently on cost issues as we move forward.

Software Development Life Cycle



Appendix C

Pole Owner/Attacher Group Presentation Examining Database-Related Issues (original)

Pole Owner/Attacher Group Presentation Examining Database-Related Issues

I.17-06-027 Workshop

November 15, 2018

Attachers and Pole Owners Effort to Address USE Case Scenarios

- The ACR and OIR encouraged pole owners and attachers to "meet among themselves in order to discuss the issues identified in the ACR.
- Consistent with this suggestion, pole owners and pole tenants engaged in series of informal meetings to:
  - Discuss the issues raised in the OIR and the ACR
  - Share information and perspectives
  - Consider possible paths forward
- All pole owners and tenants party to the OII were invited, and discussions included the major investor-owned utilities ("IOUs"), competitive local exchange carriers ("CLECs"), commercial mobile radio service ("CMRS") providers, and incumbent local exchange carriers ("ILECs"). Municipal Owned Utilities attended some of the meetings.

The Meetings:

September 14
4 hour meeting in Sacramento
Invitation to all pole owners and attachers on OII Service list to discuss issues raised in OII and explore possible paths forward.

October 9
6 hour meeting in San Francisco/webcast
Discussed pole data categories and invited straw person proposals

October 25
2 hour meeting in San Francisco/webcast
Discussed various industry straw proposals.

November 6
6 hour meeting in San Francisco/webcast
Discussed various industry proposals, identified consensus and non-consensus issues, and assembled outline of industry workshop presentation

Comprehensive Statewide Database is Not Advised

- **Speed of Deployment** – All of the major pole owners currently have pole information in electronic format. Opening access to that data to third parties would be much faster than designing and populating a new database from scratch.
- **Incompatible Data Formats** – None of the major pole owners use the same format for their pole data. Therefore, a comprehensive database would require the development of a common format, and translation of each of the pole owners' data sets into the common format. Examples are such basic things as how a pole is identified (there is no common format for a unique pole identifier) and where it is located (some pole owners use GIS coordinates, others use street addresses). The translation process inevitably would lead to data mismatches and less accurate information.
- **Cost** – A new database would need to be designed, implemented, populated, and maintained – all at additional cost.
- **Avoiding Redundancy** – Each pole owner has designed its pole database to serve its unique business needs and would be maintained. A statewide database would be a redundant, "least common denominator" platform not designed for any particular business purpose.
- **Regional Databases Are Adequate** – Most attachers have regional service areas and don't need access to statewide pole information. For example, Comcast does not need access to SDG&E's pole data and Cox does not need access to PG&E's pole data.
- **Security Concerns** – A statewide database would expose all of the major pole owners' pole data to a single breach.
- **Uncertain Benefits** – The benefits of a statewide database are unclear.

Joint Parties' Proposal for Pole OII

Phase 1 – Pole Data and CPUC Information Portal

Electronic Access to Pole Data

Within one year* of a Commission order, the major pole owners (AT&T, Frontier, LADWP, PG&E, SCE, SDG&E, and SMUD) must make the following pole data available in electronic format, either in real time or 1 business day:

- Unique identifier of pole
- Pole location information (e.g., GIS coordinates and/or address)
- High fire threat district and tier category
- Pole length, class, and material
- Pole installation date
- Name of any other joint owner(s); % ownership of each joint owner(s)
- Intrusive test data: date of last test and test result
- Number of pending attachment application(s) (if any) and/or make-ready work (if available)
- Notice of any pending pole replacement and date (if available)
- Buddy pole info: identification of incomplete pole transfer situation, date of second pole install, identification of parties with attachments on old pole (if available).

**Items in red no industry consensus*

Note: The industry coalition of pole owners and attachers ("industry coalition") expects that the categories of data identified as accessible will be maintained by the pole owners listed above and made available to attachers upon request and that attachers will not be responsible for collecting this data. However, the industry coalition also recognizes that there may be limited instances where data may be (i) inaccurate due to a variety of factors including, but not limited to, data entry errors or (ii) missing due to the age of pole or data storage issues. In proposing this rule it is not the industry coalition's intent to suggest that limited instances of missing or incorrect data would subject the pole owner to fines or penalties or would constitute a violation of their pole attachment agreements. Some parties do not agree in full to this Note.

Joint Parties' Proposal for Pole OII

Phase 1 – Pole Data and CPUC Information Portal (cont.)

Third Party Attacher Information Portal on CPUC Website

- Provides an overview of the California process for new entrants
- Includes hyperlinks to pole owners' portals/websites (which include more detailed description of the pole owners' access process and application forms), ROW Rules, GO 95, key CPUC decisions, etc.

Joint Parties' Proposal for Pole OII

Phase 2 – Attachment Data (cont.)

- ***Accuracy of the data:*** The fidelity of the data -- both for initial population and on-going maintenance -- must be considered in light of the purpose of the data.
- ***Providing Secure Access to Attachment Data:*** Parties must consider how best to provide secure access to the above data and determine an implementation timeline. Need to recognize critical network infrastructure and competitive concerns.
- ***Cost Considerations:*** The parties will need to address how much additional cost would be involved to implement the solutions identified in this phase. The cost types that will need to be addressed include:
  - Cost of gathering data on attachments; and
  - Cost and manner of maintenance and update of data in the chosen repositories.

Joint Party's Proposal for Pole OII

- **Phase 2 – Attachment Data (cont.)**
- ***Cost Recovery:*** Parties will need to discuss how/from whom those costs would be recovered.
- ***Notes:***
  - This phase may require a survey.
  - This phase will require technical workshops and extensive industry cooperation.
- ***Buddy Poles***
  - Consider if non-database related aspects of buddy poles are part of the OII vs. OIR.
  - If part of the OII, Phase 2 could consider identification of incomplete pole transfer situation, factors contributing to creation of buddy poles, develop measures to reduce the presence and quantity of buddy poles.

Joint Party's Proposal for Pole OII

- **Phase 3 – Conduit Data**

Appendix D

January 22-23, 2019 Workshop – Agenda

Tentative Agenda for Informal Industry Workshop

In Pole Database OII, I.17-06-027
Tuesday, January 22 – Wednesday, January 23, 2019

Tuesday, January 22	
Time	**Topic**
10:00 – 10:20 AM	Roll call of parties, review Nov. workshop and subsequent developments
10:20 – 11:00 AM	Review Track 1A consensus and non-consensus items and discuss proposal to include attachment data in Track 1
11:00 – 11:30 AM	Discuss which pole owners are participating in Track 1 • Confirmed: AT&T, Frontier, PG&E, SDG&E, and SCE • Unknown: LADWP, PacifiCorp, SMUD, other pole owners?
11:30 – 12:30 PM	Resolve Track 1A non-consensus items (start)
12:30 – 1:30 PM	Lunch break
12:30 – 1:30 PM	Resolve Track 1A non-consensus items (finish)
1:30 – 3:30 PM	Discuss Track 1B -pole data monitoring • Creation of regularly generated status reports to CPUC • Respond to specific CPUC inquiries for status information
3:30 – 5:00 PM	Test Track 1 against Use Case # 1 – "Maintain Accurate and Comprehensive Pole & Conduit Asset Inventory in Spatial Database"
Wednesday, January 23	
Time	**Topic**
9:00 – 9:15 AM	Roll call of parties, summarize day 1, review day 2 agenda
9:15 – 11:15 AM	Test Track 1 against Use Case # 8 – "Facilitate Nondiscriminatory Access to Poles & Conduit and Enhance Competition"
11:15 – 12:00 PM	Establish Track 1 working group and implementation schedule
12:00 – 1:00 PM	Lunch break
1:00 – 4:00 PM	Start Track 2 discussion • Establish preliminary list of essential data points • Create technical working group to identify and evaluate possible solutions for populating databases
4:00 – 5:00 PM	Next steps • Assign responsibility for preparing workshop mini-report • Track 1 working group action plan • Schedule Track 2 workshop • Concluding remarks

Appendix E

Pole Owner/Attacher Group Presentation Examining Database-Related Issues (revised w/ highlighted workshop notes)

Pole Owner/Attacher Group Presentation Examining Database-Related Issues

I.17-06-027 Workshop

January 22-23, 2019

(workshop edits highlighted)

Attachers and Pole Owners Effort to Address USE Case Scenarios

- The ACR and OIR encouraged pole owners and attachers to "meet among themselves in order to discuss the issues identified in the ACR.
- Consistent with this suggestion, pole owners and pole tenants engaged in series of informal meetings to:
  - Discuss the issues raised in the OIR and the ACR
  - Share information and perspectives
  - Consider possible paths forward
- All pole owners and tenants party to the OII were invited, and discussions included the major investor-owned utilities ("IOUs"), competitive local exchange carriers ("CLECs"), commercial mobile radio service ("CMRS") providers, and incumbent local exchange carriers ("ILECs"). Municipal Owned Utilities attended some of the meetings.

The Meetings:

September 14
4 hour meeting in Sacramento
Invitation to all pole owners and attachers on OII Service list to discuss issues raised in OII and explore possible paths forward.

October 9
6 hour meeting in San Francisco/webcast
Discussed pole data categories and invited straw person proposals

October 25
2 hour meeting in San Francisco/webcast
Discussed various industry straw proposals.

November 6
6 hour meeting in San Francisco/webcast
Discussed various industry proposals, identified consensus and non-consensus issues, and assembled outline of industry workshop presentation

Comprehensive Statewide Database is Not Advised

- **Speed of Deployment** – All of the major pole owners currently have pole information in electronic format. Opening access to that data to third parties would be much faster than designing and populating a new database from scratch.
- **Incompatible Data Formats** – None of the major pole owners use the same format for their pole data. Therefore, a comprehensive database would require the development of a common format, and translation of each of the pole owners' data sets into the common format. Examples are such basic things as how a pole is identified (there is no common format for a unique pole identifier) and where it is located (some pole owners use GIS coordinates, others use street addresses). The translation process inevitably would lead to data mismatches and less accurate information.
- **Cost** – A new database would need to be designed, implemented, populated, and maintained – all at additional cost.
- **Avoiding Redundancy** – Each pole owner has designed its pole database to serve its unique business needs and would be maintained. A statewide database would be a redundant, "least common denominator" platform not designed for any particular business purpose.
- **Regional Databases Are Adequate** – Most attachers have regional service areas and don't need access to statewide pole information. For example, Comcast does not need access to SDG&E's pole data and Cox does not need access to PG&E's pole data.
- **Security Concerns** – A statewide database would expose all of the major pole owners' pole data to a single breach.
- **Uncertain Benefits** – The benefits of a statewide database are unclear.

Joint Parties' Proposal for Pole OII

Track 1 – Pole Data and CPUC Information Portal

Electronic Access to Pole Data

Within one year* of a Commission order, the major pole owners (AT&T, Frontier, LADWP, PG&E, SCE, SDG&E, and SMUD) must make the following pole data available in electronic format, either in real time or 1 business day:

- Unique identifier of pole
- Pole location information (e.g., GIS coordinates and/or address)
- High fire threat district and tier category
- Pole length, class, and material
- Pole installation date
- Name of any other joint owner(s); % ownership of each joint owner(s) (actual grade ownership?)
- Intrusive test data: date of last test and test result
- Number of pending attachment application(s) (if any) and/or make-ready work (if available)
- Notice of any pending pole replacement/reinforcement and date (if available)
- Buddy pole info: identification of incomplete pole transfer situation, date of second pole install, identification of parties with attachments on old pole (if available).

**Items in red no industry consensus*

Note: The industry coalition of pole owners and attachers ("industry coalition") expects that the categories of data identified as accessible will be maintained by the pole owners listed above and made available to attachers upon request and that attachers will not be responsible for collecting this data. However, the industry coalition also recognizes that there may be limited instances where data may be (i) inaccurate due to a variety of factors including, but not limited to, data entry errors or (ii) missing due to the age of pole or data storage issues. In proposing this rule it is not the industry coalition's intent to suggest that limited instances of missing or incorrect data would subject the pole owner to fines or penalties or would constitute a violation of their pole attachment agreements. Some parties do not agree in full to this Note.

Joint Parties' Proposal for Pole OII

All Tracks – Pole Data and CPUC Information Portal (cont.)

Third Party Attacher Information Portal on CPUC Website

- Provides an overview of the California process for new entrants
- Includes hyperlinks to pole owners' portals/websites (which include more detailed description of the pole owners' access process and application forms), ROW Rules, GO 95, key CPUC decisions, etc.

Includes CPUC access to data (note: need to understand/define how this plays into 'public records' expectations & confidentiality)

Joint Party's Proposal for Pole OII

Track 2- Attachment Data

- Parties will consider what, if any, of the information listed below should be provided by entities who own, co-own or lease a whole pole, or any portion of a pole (that is, all facilities owners attached to the pole), in electronic format within a timeframe to be determined:
  - Electric attachments: number and type of conductors, location on pole
    - Primary
    - ~~Secondary~~
    - ~~Service~~
  - Communications attachments: owner, number & type of cables, location on pole (Note: includes Telco, CATV, CLEC & Wireless)
    - Main-Line
    - ~~Service Drops~~
  - Other attachments: owner, type, location on pole
    - Transformers/Equipment/Switches
    - ~~Radios~~
    - Antennae
    - Streetlights (pole mounted)
    - ~~Boxes / 'Strand Mounted'~~
  - Support info: anchor, guy, special below ground construction, etc.
  - Special Loading Cases (local ice/wind conditions)
  - Notice of any pending attachment application and/or make-ready work
  - Indicator of 'exempt' vs. 'non-exempt' equipment

Joint Parties' Proposal for Pole OII

Phase 2 – Attachment Data (cont.)

- ***Accuracy of the data:*** The fidelity of the data -- both for initial population and on-going maintenance -- must be considered in light of the purpose of the data.

- ***Providing Secure Access to Attachment Data:*** Parties must consider how best to provide secure access to the above data and determine an implementation timeline. Need to recognize critical network infrastructure and competitive concerns.

- ***Cost Considerations:*** The parties will need to address how much additional cost would be involved to implement the solutions identified in this phase. The cost types that will need to be addressed include:
  - Cost of gathering data on attachments; and
  - Cost and manner of maintenance and update of data in the chosen repositories.

Joint Party's Proposal for Pole OII

- **Phase 2 – Attachment Data (cont.)**

- ***Cost Recovery***: Parties will need to discuss how/from whom those costs would be recovered.

- ***Notes***:
  - This phase may require a survey.
  - This phase will require technical workshops and extensive industry cooperation.

- ***Buddy Poles***

  - Consider if non-database related aspects of buddy poles are part of the OII vs. OIR.
  - If part of the OII, Phase 2 could consider identification of incomplete pole transfer situation, factors contributing to creation of buddy poles, develop measures to reduce the presence and quantity of buddy poles.

Joint Party's Proposal for Pole OII

- **Track 3 – Conduit Data (Access)**

  - Box
  - Duct
  - Required Air Cooling Space

Workgroup Definitions, Assignments, Timelines

- **Tracks**
  - Track 1 – "Big" vs. "Small" Definition (Who does Track 1 apply to? How is accountability different depending on the company? Exemption request process? When will Track 1 be required to be complete?)
    - SCE, SDG&E, PG&E, AT&T, Frontier, Extenet, CALTEL, SoCal Gas, Pacificorp, CMUA, CCTA/Cable, Small LEC, Crown Castle, CPUC (Optional?)
  - Track 1 – How does all the work get done ('unpack' the bullets, what does each company's product look like, how will data be shared, finalize the work plan for multiple entities; why is it required? – show alignment to use cases, safety, access)
  - Track 2 – (same items as above, who what when why)
  - Track 2 – Further Subgroup Definition
  - Track 2 – Identify additional use cases and prioritize
  - Track 3 – 'Day in the Life' (Define the problem in terms of how the process works today across CA)
    - Chair by Communication Company?
- **Overarching Issues**
  - Data Integrity (Define 'accuracy' expectations, up-to-date reliability, confidence level, etc.)
  - Legacy Data Collection Options (i.e. field survey / LiDAR / etc.)
  - Confidentiality / Cyber Security
  - Cost Sharing, Cost-Benefit Analysis
  - Explore other means of electronic access for conduit beyond a 'database' (Track 3)
  - Safety – assessment of completeness
  - Core work group? Mechanism to effectively 'approve' work plans / work-group products? Steering Committee?

Appendix F

ExteNet Systems (California) LLC Presentation

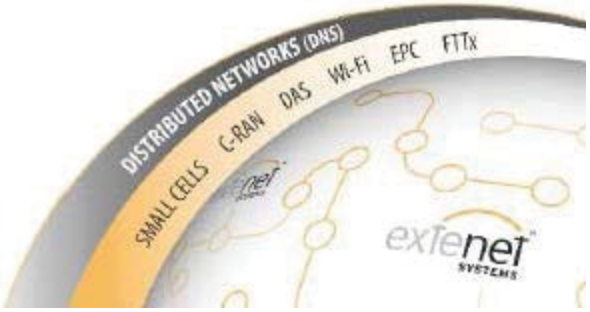
extenet SYSTEMS

Mobile Connectivity Everywhere

CALIFORNIA PUBLIC UTILITY COMMISSION POLE ATTACHMENT DATABASE WORKSHOP

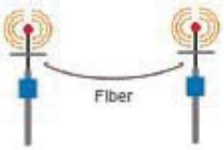
JANUARY 22 & 23, 2019
SAN FRANCISCO, CALIFORNIA

HARAN RASHES
DIRECTOR OF EXTERNAL RELATIONS
D-(630) 245-2064 / M-(734) 660-9283
HRASHES@EXTENETSYSTEMS.COM



ABOUT EXTENET SYSTEMS

EXTENET IS A LEADING PROVIDER OF
CONVERGED COMMUNICATION INFRASTRUCTURE AND SERVICES
FOR ADVANCED NETWORK CONNECTIVITY



OUTDOOR NETWORKS
| Suburban | Urban | Rural

24 x 7
CARRIER CLASS NOC

INDOOR NETWORKS
| Sports & Entertainment | Class A | Hospitality | Healthcare

KEY EXTENET COMPANY FACTS

| FOUNDED IN 2002 | LARGEST INDEPENDENT OWNER & OPERATOR OF DISTRIBUTED NETWORKS (DNS)
| RE-CAPITALIZED FOR $1.4 BILLION IN 2015 | PRIMARY CUSTOMERS INCLUDE CARRIERS & BUILDING OWNERS

CORPORATE OVERVIEW

Who We Are:

- Telecommunications Utility
- Early industry entrant & innovator: founded in 2002
- Headquarters: Lisle, Illinois
- Managing networks in the United States & Canada
- 600+ attachment agreements with public, cooperative, municipal utilities as well as municipalities
- Registered or licensed telecommunications provider in 45 states

California Public Service Commission:

- ExteNet is a certificated telecommunications provider holding Certificates of Public Convenience And Necessity issued by the Public Service Commission in D.05-07-004 and D.06-04-063 (issued to ExteNet Systems (California) LLC under its predecessor in interest, ClearLinx Network Corporation).

EXTENET IN CALIFORNIA

Utility Agreements in California:

- AT&T California
- Northern California Joint Pole Association (NCJPA)
- Pacific Gas and Electric Company (PG&E)
- San Bernardino County Transportation Authority (SBCTA)
- Southern California Edison Company (SCE)
- Verizon California, Inc.
- Liberty Utilities
- Pacific Gas and Electric Company (PG&E)
- Sacramento Municipal Utility District (SMUD)
- San Diego Gas and Electric Company (SDG&E)
- Southern California Joint Pole Committee (SCJPC)

permits the placement of fiber, antenna and wireless equipment on utility-owned poles.

Municipal Agreements in California:

- China Basin Ballpark Company, LLC
- City of Antioch
- City of Citrus Heights
- City of Daly City
- City of Emeryville
- City of Hayward
- City of Los Angeles
- City of Mountain View
- City of Oakland
- City of Palo Alto
- City of Riverside
- City of San Diego
- County of Marin
- San Francisco Municipal Transportation Agency (SFMTA)
- City of Anaheim
- City of Bakersfield
- City of Concord
- City of Dublin
- City of Glendale
- City of Loma Linda
- City of Modesto
- City of Napa
- City of Oakley
- City of Richmond
- City of Salinas
- City of South San Francisco
- Marin General Services Authority
- San Francisco Public Utilities Commission (SFPUC)

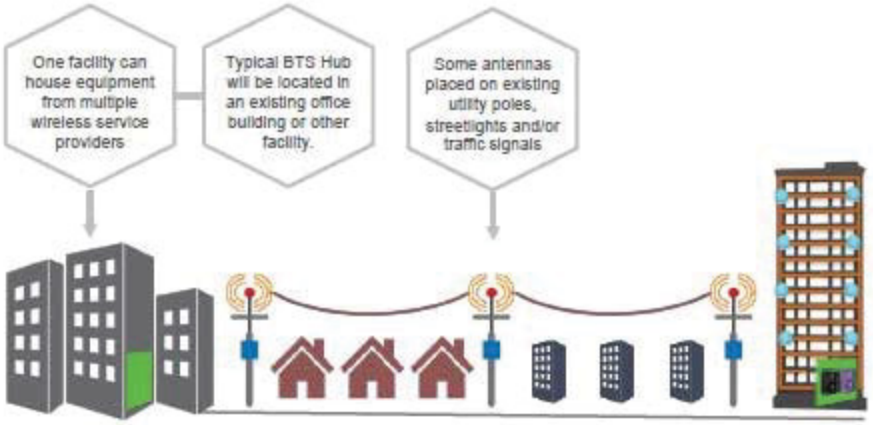
permits the placement of fiber, antenna and wireless equipment in the public rights-of-way and on municipally-owned utility owned poles and structures.

ExteNet in California

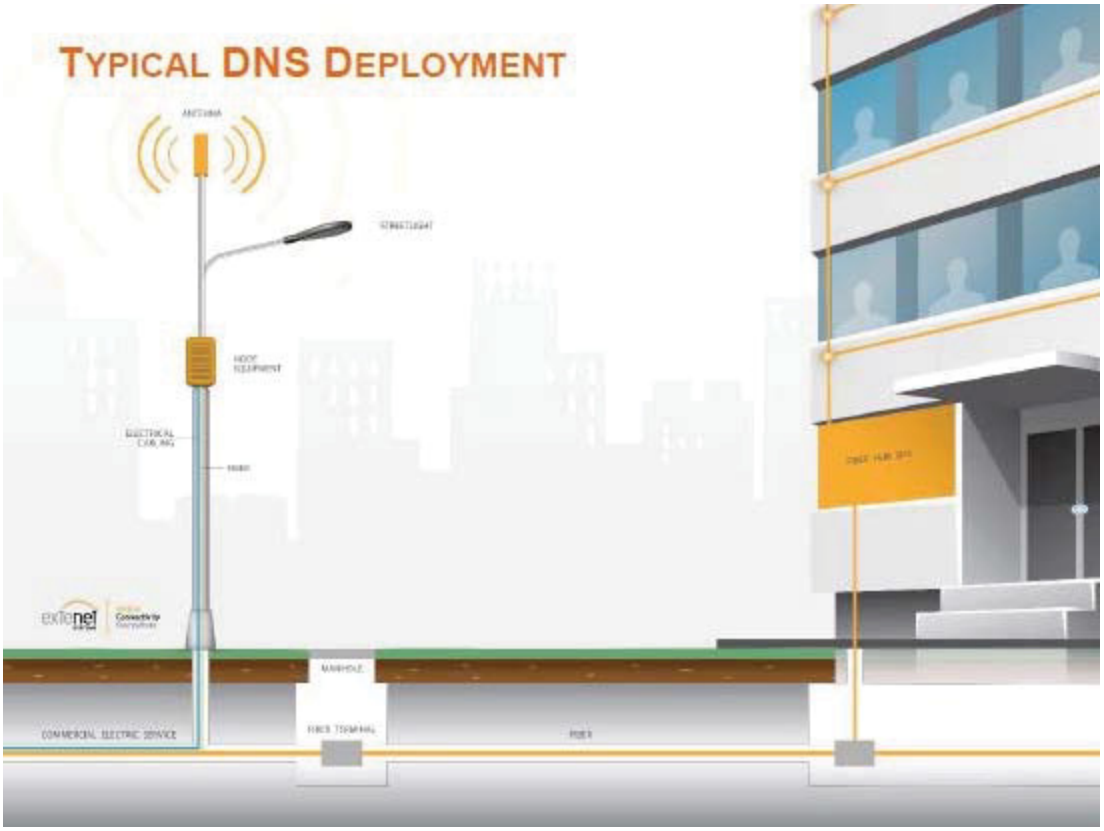
- **Networks and Wireless Facilities Currently Installed throughout the State of California!**
- **ExteNet anticipates installation of additional networks and wireless facilities in California as the need for wireless capacity continues to grow.**
- **Currently on 8,233 GO-95 Inspected Poles in California**
  - 7585 Fiber Poles
  - 648 Node Only Poles
  - Additionally attached to poles on private property.

Primary Business Units

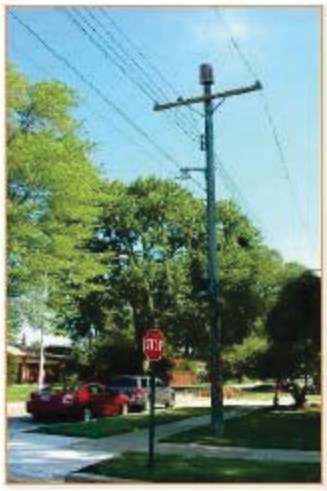
Our Distributed Networks (DNS) Bring Networks Closer to User to Augment Connectivity



Typical DNS Deployment

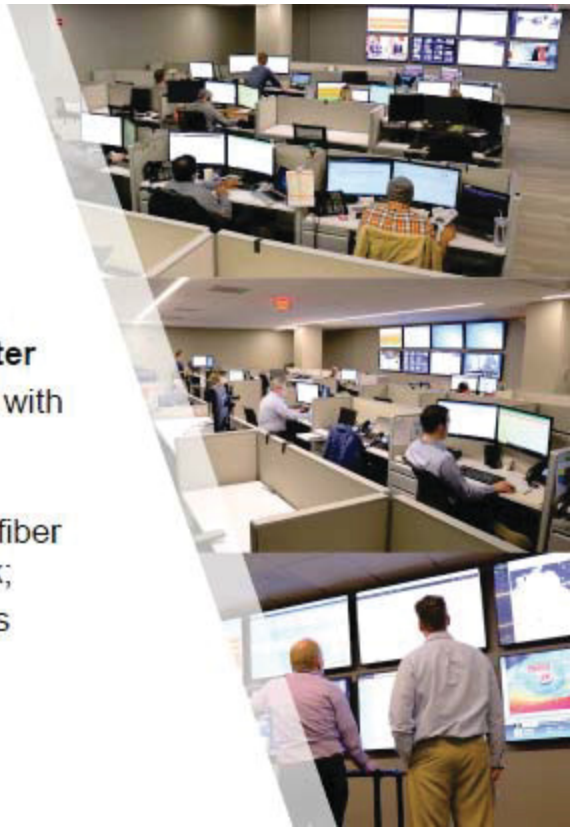


TYPICAL INSTALLATIONS



MONITORING OUR NODES

- **ExteNet maintains a comprehensive 24/7/365 Network Operations Center**
  - Located in Lisle, Illinois with a backup center in Wisconsin;
  - Monitors all nodes and fiber on the ExteNet Network;
  - We know when a pole is down before you do.



CALIFORNIA ON THE FOREFRONT….

- **California would take the national lead by mandating a comprehensive pole attachment database.**
  - Economic benefits;
    - Would encourage broadband and wireless deployment.
  - Technological benefits;
    - Would be a model for other states.
  - Public safety benefits;
    - Would allow the quick identification of problems and issues quickly for PUC, municipalities, and public safety departments.
  - Pole Owner benefits;
    - Would lessen requests that cannot be accommodated;
    - Would allow easier access to know who is on your pole or in your space;

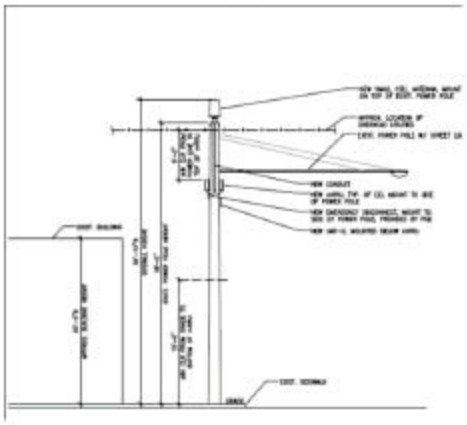
MOST IMPORTANT NEEDED FIELDS IN DATABASE

- **The Pole Itself:**
  - Ownership
  - Height
  - Composition
  - Depth buried
  - Recent Photographs of the Pole
  - Distance of pole to pole on either side
  - Planned pole replacement or modification
  - Age of pole
  - Pole location (e.g. latitude and longitude, mile marker, street address, etc.)
  - Pole identification number
  - Pole location (e.g. latitude and longitude, mile marker, street address, etc.)
- **External Factors:**
  - Existence of underground conduit near pole
  - Planned undergrounding project in area of pole
  - Located in public right-of-way or on or private property;
  - Easements associated with pole
- **Current Attachments on the Pole:**
  - Attachment weight
  - Cross Arms (and position/height)
  - Guy wires
  - Identity of attachers correlated with attached equipment whether in the communications or supply zone
  - location of existing attached equipment
  - Type of attachments (i.e. fiber, coax, equipment)
  - height of any equipment or antennas attached to the pole
  - Planned/applied for attachments
- **Pole History and Studies**
  - Results of carrier inspections
  - Estimate of remaining space in communications zone
  - pending attachment application(s) and timing of new attachment
  - maintenance reports and pending maintenance projects with projected completion time(s);
  - Pole owner requirements that exceed General Order 95;

Yes, we know these issues will be addressed in this proceeding……

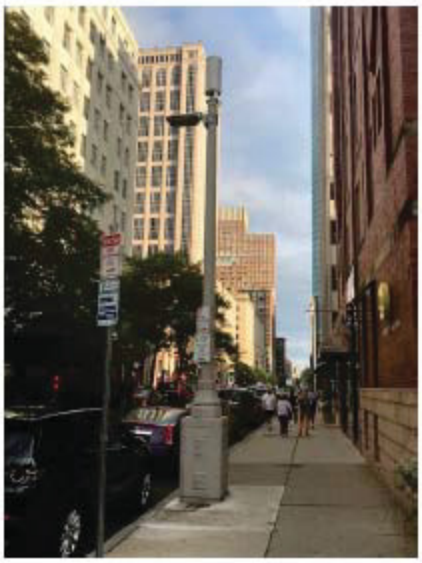
Some of the Database Benefits to Attachers

- Know what we are getting BEFORE we engage pole owner for make-ready inspection;
- Avoid costly and time consuming choice of "wrong" pole;
- Better estimate of make-ready;
- Hidden issues with the pole that might not otherwise come out (i.e., someone else is planning to attach);
- Quick estimate of NESC and Rule 95 Compliance.



Some of the Database Benefits to Pole Owners

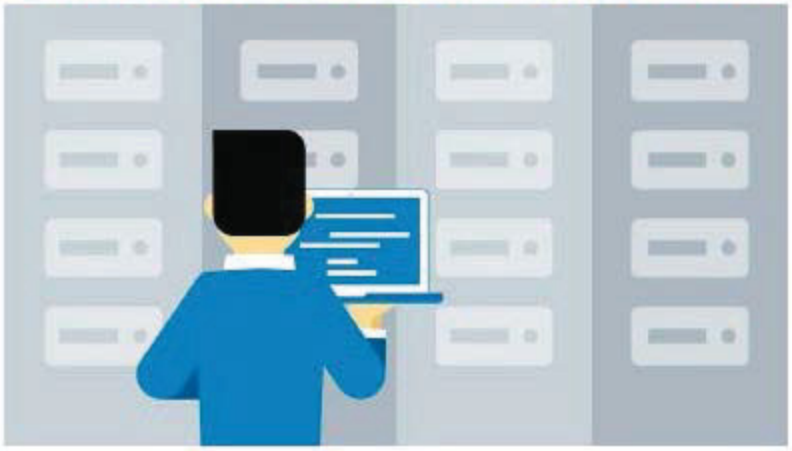
- Avoid wasting scarce resources chasing information for potential attachers;
- Better estimate of make-ready;
- Know if pole is in NESC and Rule 95 Compliance;
- If a shut-off is necessary, quickly notify interested parties;
- Get notified of problems you may not already know of.



Some of the Database Benefits Public Safety

- Quick access of pole and attachment owners in an emergency;
- First Responder's can more safely assess the distressed pole and situation;
- Fast notification to affected attachment owners;
- Customer complaints (to PUC and Municipalities) can be quickly routed to the equipment owner;

All Parties Benefit from a Comprehensive California Pole Attachment Database!




The leading provider of
Converged Communications
Infrastructure and Services
in North America, creating long term
value for our customers
Thank You!
extenet
SYSTEMS

Appendix G

CALTEL Track 3 Presentation

Conduit Database Design

The proposed conduit database design incorporates two object types: Box and Duct. A Duct is a pathway through which cables can be run. A Box is a location where the Duct is accessible. Both objects can be thought of spatially, that is, both a Duct and Box are physically present in the world at a geographic location. The spatial location of these items defines the connectivity of the conduit network. Additionally, details such as conduit type, year of installation, etc. are associated to each object.

Duct objects are required to representationally start and end on a Box object. This corresponds to the physical presence of that duct in a Box. To model a Duct which passes under a Box, we need only ensure that the Duct object does not have an endpoint at that Box location.

Some Box objects are not strictly boxes, but rather a special accessible location for a conduit. Examples include “stub” boxes (e.g. a conduit ends at that points) and “Y-Cast” boxes (e.g. a Y-cast of the conduit).

In some cases, the geospatially-stored location of an object may differ slightly from the physical location of the underlying object. This is done to allow for the expression of the correct object-network relationship. For modeling purposes, Duct endpoints and Box objects are considered to form a connected network if they are placed within 0.001 meters (1 millimeter) of each other. For the purposes of finding a physical location, this deviance does not result in any substantial detriment.

To accommodate the case where ducts are placed inside other ducts (e.g. innerduct, microduct, etc.), Duct objects can be linked to other duct objects through a “placed-inside-of” relationship. These related duct objects do NOT need to have their own geospatial representation.

Placeable multi-cell duct banks (e.g. MaxCell, microduct duct packs, etc.) shall be modeled as an individual Duct object for each available cell.

Object Models

Duct

Field Name	Field Description	Type	Notes
ductUUID	Globally unique identifier for this duct segment	Varchar(255)	Methodology to prevent intercompany overlap TBD
ductOwnerID	Owner ID for this Duct, if available	Varchar(255)	Used to relate Company databases to the conduit object model
diameter	Diameter - inside, smallest dimension, inches	Float	For textile innerduct (e.g. MaxCell), this is the maximum cable size allowed
type	Type of Duct - PVC, Clay, Redwood, MaxCell, etc.	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
lastProofDate	Date of last proof testing	Datetime	
lastProofResult	Results of last proof testing – Good, collapsed, etc.	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
placedInsideOf	ductUUID of parent duct object (e.g. the Duct that this Duct is placed inside of)	Varchar(255)	
owner	Owner of this Duct	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
inUseBy	Occupant of this Duct. If set, this Duct is in use.	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation – same as above
inUseDiameter	Diameter – outside, largest dimension, inches – of the occupant of this Duct	Float	For nested Duct objects, this MUST be set to the OD of the product that occupies the Duct
inUseFillType	Type of occupant in this Duct – fiber, copper, duct	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
fieldNotes	Field notes for this Duct – e.g “collapsed at 240’ from MH123”	Text	
geom	Geometry of this Duct object	Geometry	Polygonal chain representing the location of this Duct in space. For text-based exchange, this object shall be represented as a WKT containing one LINESTRING object, projected in the WGS84 geodetic datum

Box

Field Name	Field Description	Type	Notes
boxUUID	Globally unique identifier for this box	Varchar(255)	Methodology to prevent intercompany overlap TBD
type	Type of Box – Handhole, Manhole, Stub, Y-Cast, etc.	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
owner	Owner of this Box	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
installDate	Date of installation of this Box	Datetime	
lastInspectionDate	Date of last inspection	Datetime	
lastInspectionResult	Result of last inspection – e.g. good, needs rehab	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
dimLength	Length of Box – inside, inches	Float	
dimWidth	Width of Box – inside, inches	Float	
dimHeight	Height of Box – inside, inches	Float	
rating	Traffic rating of this Box – A8, H10, H20, etc.	Varchar(255)	Pre-defined list (aka domain) to be defined before implementation
buried	Is this Box buried?	Boolean	Used to determine Box accessibility
fieldNotes	Field notes for this Box – e.g. “this manhole is always flooded”	Text	

Future work

- Model Duct sidewall appearances (e.g. which MH/HH sidewall a Duct appears on)
    - This would be done with a relationship between Duct and Box objects that adds additional information
- Model end-to-end Duct coupling (e.g. innerduct with couplers)
    - This would be done with a relationship between Duct and Duct, showing a coupling
    - Likely company proprietary

Appendix H

List of Workshop Participants

APPENDIX H

WORKSHOP PARTICIPANTS

- AT&T
- BVES
- CALFIRE
- CALTEL
- CCTA
- CA-PAO
- CHARTER/TWC
- CMUA
- COMCAST
- COX
- CPUC-SED, CD, ED
- CROWN CASTLE/SUNESYS
- EXTENET SYSTEMS
- FRONTIER
- LADWP
- LIBERTY ENERGY
- PACIFICORP
- PG&E
- SCE
- SCG
- SDG&E
- SMALL LECS
- SMUD
- SPRINT
- VERIZON
- CHRIS WITTEMAN
- BLACK & VEATCH
- COPPER LEAF TECHNOLOGIES