Pacific Gas and Electric Company

Electric Rule 20 Guidebook

July 2023

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Introduction

In response to local government interest in enhancing the aesthetics of their communities, the California Public Utilities Commission (CPUC) in 1967 established Electric Tariff Rule 20 (Electric Rule 20). It contains three separate programs that provide for the undergrounding of existing overhead utility lines.

Electric Rule 20 itself uses language that may be foreign to those unfamiliar with the utility world. PG&E has prepared this planning guide as an educational tool for cities and counties[1] that may be considering the conversion of existing overhead utility lines to underground. This included coordination with local governments, the California State Association of Counties, the League of California Cities, and other stakeholder groups.

This guidebook explains how undergrounding is funded pursuant to each of the three programs of Electric Rule 20. It will also identify and illustrate models used for planning a conversion program, and suggest how utilities, city and county governments, developers, residents, and businesses can work together to implement undergrounding of overhead utility lines.

We hope this will help cities and counties understand not only the language and procedures of Electric Rule 20, but also the operational complexities of implementation. This is not intended to serve as legal advice, however, and local governments should rely upon their own counsel. They should also feel free to consult with the CPUC's Energy Division as they proceed. The CPUC places limits on the amount of money electric utilities may spend on utility ratepayer-funded underground conversion through the General Rate Case (GRC). The CPUC has taken steps to ensure that the utility companies' Rules include provisions for communities to expand their conversion programs through use of other funding sources. Many of those sources are identified in this guidebook. For more information on how Electric Rule 20 pertains to the General GRC, please see the Rule 20A Work Credits section of this guidebook.

PG&E will accept feedback on the usability of the guidebook and incorporate changes into future iterations where appropriate**.** The CPUC has sunset the Rule 20A Program in Decision 23-06-008. This Rule 20 Guidebook includes modifications made to the Rule 20A Program to comply with this CPUC Decision.

[1] In this document the term "city or county" is used because it is the language in the CPUC tariff. It is understood to include "town" as well.

Components of Electric Rule 20

The rules established by the CPUC for electric utility companies are collectively known as Electric Rule 20. These include Rules 20A, 20B and 20C. Each category of Electric Rule 20 addresses different funding mechanisms and qualifications for undergrounding existing overhead utility lines.

Rules	Description of Funding
Electric Rule 20A	Conversion projects under this section of the rules are funded by ratepayers throughout the service territory, but only for projects deemed to create a general public benefit by satisfying at least one qualifying criterion.
Electric Rule 20B	Conversion projects under these rules are funded by both ratepayers and property owners. This program provides limited ratepayer subsidies for undergrounding utility lines in areas that do not qualify under Rule 20A.
Electric Rule 20C	Conversion projects under these rules are funded almost entirely by those requesting the underground conversion. This program enables property owners to pay for the cost of undergrounding utility lines which do not qualify under Rule 20A or 20B.

Additional information about responsible parties and payment due dates for Electric Rule 20A, 20B, and 20C projects can be found in the table on the following page.

Category	Responsible Party	Payment(s) Due
Rule 20A	Ratepayers are responsible for the full project cost. OR The city/county can elect to cost share the project for costs exceeding available work credits	Work credits are deducted from the community's balance when the project is closed and the final cost of the project is known. If a project is cancelled prior to completion, work credits equal to the actual expenditures are deducted from the community work credit balance.
Rule 20B	Applicants are responsible for the pads and vaults for transformers and associated equipment, conduits, ducts, boxes, pole bases and performing other work related to structures and substructures including breaking of pavement, trenching, backfilling, and repaving required in connection with the installation of the underground system, all in accordance with PG&E's specifications, or, in lieu thereof, pay PG&E to do so. Ratepayers are responsible for the estimated project cost equal to building a new equivalent overhead system. Applicants are responsible for the estimated project costs that exceed the estimated cost of a new equivalent overhead system. PG&E is responsible for the costs of removal of the overhead poles, lines, and facilities.	An engineering advance is due prior to the beginning of the Engineering and Design phase. Payments to underground facilities are due prior to construction.
Rule 20C	Applicants requesting the change are responsible for the estimated project cost to remove the overhead facilities and replace with underground facilities, less the estimated net salvage value and depreciation of the replaced overhead facilities. Underground services will be installed and maintained as provided in PG&E's rules applicable thereto.	An engineering advance is due prior to the beginning of the Engineering and Design phase. Payments to underground facilities are due prior to construction.

Undergrounding Other Utility Lines

Rule 20 is a tariff that governs the state of California's CPUC jurisdictional electric utilities. The CPUC jurisdictional communications providers have their own tariffs governing undergrounding. The communications tariff rules generally set out the same criteria for undergrounding as do the electric Tariff. In practice, the communications providers "follow the electric utility into the trench." Cable television providers on the other hand do not have such a CPUC-approved tariff. Cable television providers are also required to comply with the Underground Utility District and Resolution to remove overhead facilities and generally do so according to the terms of their franchise or other agreements with the cities and counties in which they provide service.

Annual Reports

PG&E's annual reports are released on April 1 every year per CPUC order.

Making Data Requests

PG&E is obligated to share information with anyone who requests it as described in the CPUC-issued Decision 21-06-013. There is a non-disclosure agreement (NDA) that must be filled out by an agency when requesting information. A sample NDA is included as an appendix to this document. PG&E charges overhead costs across all capital investment projects, which includes Rule 20 projects. If communities would like more detailed information, including overhead costs, they can do so by utilizing the nondisclosure agreement (NDA) process included as an appendix to this guidebook.

Paying for Rule 20A Projects

Rule 20A Work Credits

Work credits are not monies, but are credits as described in the Electric Rule 20 tariff. As the name implies, the credit discounts the cost of a Rule 20A undergrounding project. One work credit is equivalent to one U.S. dollar. Municipalities can utilize work credits to pay for the full or partial cost of the project. If a municipality elects to move forward with a Rule 20A project without having sufficient work credits to cover the full cost of the project, community funds must be pre-arranged to cover the work credit shortfall. CPUC Decision 23-06-008 has reaffirmed the option for communities to contribute financially to any Rule 20A project that has insufficient work credits for completion.

Municipalities historically accrued work credits by receiving an annual allocation. Work credits were distributed to municipalities within PG&E's service territory, in which PG&E provided the distribution of electricity through PG&E's facilities. This includes cities and counties who have elected to purchase their own energy through Community Choice Aggregation (CCA). The amount allocated each year to each community was based on the total number of work credits authorized through the General Rate Case and the allocation formula, sometimes referred to as the 50/50 rule, provided by the Electric Rule 20 Tariff:

> *Fifty percent of the total authorized amount shall be allocated in the same ratio that the number of overhead meters in any city or unincorporated area of any county bears to the total system overhead meters; and b. Fifty percent of the total authorized amount shall be allocated in the same ratio that the total number of meters in any city or unincorporated area of any county bears to the total system meters.*

Work credits are deducted from the community's balance when the project is closed and the final cost of the project is known. If a project is cancelled prior to completion, work credits equal to the actual expenditures are deducted from the community work credit balance.

Project Cost Information

Project cost information will be included in PG&E's annual report, which is available on PG&E's website. The annual report provides community level data, including total value of projects completed to date per community, and project level data, including total project cost at its current stage.

CPUC Decision 21-06-013 has discontinued authorization of new Rule 20A work credits for allocation after December 31, 2022. Additionally, municipalities are not permitted to borrow future work credits beyond 2022 work credit allocations. Unauthorized work credit trading is not permitted, except for intra-county donations of work credits from a county government to cities and towns within the county or from a city or town to its county government, and pooling of work credits amongst two or more adjoining municipalities for a project with community benefit for the adjoining municipalities. Any city or the unincorporated area of any county may continue to use existing work credits allocated on or before December 31, 2022 for projects that qualify.

CPUC Decision 23-06-008 has set the date for all community's work credit balance that has not been deducted to expire on December 31, 2033. Additionally, the CPUC has clarified that PG&E may deduct Rule 20A work credits from a community's work credit balance prior to the actualization of the associated project cost.

Additional Funding Sources

Some cities and counties use Rule 20A work credits in conjunction with non-utility funding and various combinations of Rules 20B and 20C. Cities and counties can generate local, non-utility funding for Rule 20A, Rule 20B, or 20C projects with many of the same tools used to fund other local improvements.

Assessment Districts

Pursuant to the 1911 Street Improvement Act, assessment districts may be created by the city or county to pay for city or county costs, such as a city or county-owned street lighting system to be installed in conjunction with a Rule 20A project.

Customer-funded Conversions of Service Laterals

The Electric Rule 20 Tariff provides the ability for municipalities to determine how much, if any, of the conversion costs should be paid for by Rule 20A work credits:

> *The governing body may establish a smaller footage allowance, or may limit the amount of money to be expended on a single customer's electric service, or the total amount to be expended on all electric service installations in a particular project.*

If a municipality chooses to not use Rule 20A work credits for customer service laterals and service conversions, it is the municipality's responsibility for the administration of collecting payment from impacted property owners.

Rule 20A/B Combination Projects

There are times when it is possible to complete a project as a Rule 20A/B combination project, which can be coordinated by contacting your Rule 20A liaison. These are handled as separate, interconnected projects. A boundary map clearly delineating the 20A and 20B Utility Underground District is required. Each project must meet the minimum distance requirement of one block or 600 feet, whichever is the lesser.

Reallocation of Work Credits

When a Rule 20A project requires additional work credits, work credits from communities that are considered "inactive" can be reallocated to those communities who have projects with insufficient work credits to proceed. This process is commonly referred to as reallocation. Section A.1.c of the Electric Rule 20 Tariff states:

> *When amounts are not expended or carried over for the community to which they are initially allocated they shall be assigned when additional participation on a project is warranted or be reallocated to communities with active undergrounding programs."*

The CPUC further defined the definition of an "active" community in CPUC Resolution E-4971.

1. "Formally adopts an undergrounding district ordinance which expires at completion of work within the district boundaries; or
2. Has started or completed construction of an undergrounding conversion project within the last 8 years, defined as 2011 or later[2]; or
3. Has received Rule 20A allocations from the utility for only 5 years or fewer due to recent incorporation."

Communities who do not meet this definition of "active" are considered inactive, and with the approval of the CPUC, their work credits may be reallocated to those communities who have projects that require additional work credits.

Cities and counties wishing to avoid any reallocation of their Rule 20A allocations should maintain an active undergrounding program and, ideally, a current Utilities Conversion Plan. If the allocation amounts are not sufficient to fund projects, the city or county should nevertheless identify and document project candidate areas.

If your community is currently inactive and wishes to become active, you must have adopted an ordinance or ordinances creating an underground district and/or districts as set forth in Section A.1.b. of this Rule. Please contact your Rule 20A Liaison so that PG&E can be made aware of your intention and support you appropriately.

[2] PG&E adjusts the year as needed to appropriately reflect a minimum of 8 years.

The CPUC has directed PG&E to file one Tier 2 advice letter by December 8, 2024, to propose a comprehensive reallocation proposal of Rule 20A work credits. Once this Tier 2 advice letter is approved, we will reallocate work credits by June 8, 2025. Any Rule 20A work credit that has not been allocated to a community with an Active Rule 20A Project[3] by June 8, 2025, shall be deemed expired and not available for any further reallocation.

The CPUC has directed PG&E to prioritize this reallocation to either: (1) Active Rule 20A Projects located in a city, unincorporated county, or tribal jurisdiction that has not completed a Rule 20A project since 2004, or (2) Active Rule 20A Projects where at least 50 percent of the main line trench distance will be located within Environmental and Social Justice Community census tract(s).

An Environmental and Social Justice Community census tract shall be defined as a census tract that meets one of the following criteria: (i) scores in the top 25 percent of CalEnviroScreen 4.0, along with those that score within the highest 5 percent of CalEnviroScreen 4.0's Pollution Burden but do not receive an overall CalEnviroScreen score; (ii) located in any federally recognized tribal lands, or (iii) where aggregated household incomes are less than 80 percent of area or state median income.

[3] CPUC Decision D.23-06-0008, Ordering Paragraph 4(a) states "an active Rule 20A Project shall be defined as a project with a signed resolution that the utility has designated as either "active" or on "hold." Ordering Paragraph 4(b) further explains, "A Rule 20A project that a utility has designated as on "hold" is a project that was initiated but has stopped for an indeterminate amount of time due to the community possessing insufficient work credits to fund the entire project."

Rule 20A Projects

Introduction

As shown in the graphic below, every project has four phases:

Planning: The project boundary is identified, consultation with the affected utility companies is held, the resolution or ordinance is created and other aspects of the job are prepared in readiness for the next phase.

Engineering/design: The lead trenching agent will design the trench and prepare the composite drawings and the Form B. Each participating utility will design its own system. This phase also includes staging or pre-construction activities, which includes securing contracting, easements, permits, land rights and internal PG&E approval.

Construction: Involves setting the new riser poles, excavating the trench, installing the substructure and equipment; cable pulling and splicing; energizing the new underground system; and removal of overhead lines and utility poles.

Close-out: Involves internal utility activities such as mapping the new underground system and reconciliation of all project costs.

PG&E provides the following planning, engineering and design services for a Rule 20A project unless previously agreed upon with involved parties.

Roles & Responsibilities

Rule 20A Liaisons

The Rule 20A Liaison is the first point of contact for cities and counties who are interested in undergrounding overhead poles and wires. The Liaison is responsible for successfully guiding cities/counties in developing an underground district which satisfies the Rule 20A tariff.

Specifically, Rule 20A Liaisons are responsible for:

- Contact and/or meet with each governmental body on a regular basis as assigned and/or required.
- Meet with public works officials (city engineers, directors of public works) to assist in the qualification and planning phases, prior to adoption of a formal resolution for Rule 20A projects. Conduct informational presentations and attend Community Meetings to disseminate information for Rule 20A projects.
- Help create an accurate resolution and boundary map.
- Walk project, measuring length of Underground Utility District and service laterals; walk with governmental body and estimator to ensure boundary is correct.
- Develop a budgetary estimate of project costs using PG&E calculating tools and input from Estimating and assess whether the community has sufficient Rule 20A allocations.
- Determine a reasonable customer commitment date with the governmental body, with input from estimating and project services.
- Communicate issues and risks promptly to supervisor.
- Be the Rule 20A expert and advocate for the community, fostering goodwill and trust between the customer and PG&E. Has the most current information regarding the Rule 20A Program, as provided by company management. Answer questions accurately and consistently. Provide a resource for communities to have questions regarding the Program answered quickly.
- Prepare project information file for Estimating and Project Manager. Provides information regarding specific Rule 20A projects and/or communities to various PG&E personnel, such as Contract Management, Land, Estimating, Environmental, Construction, Governmental Relations, Work Requested by Others (WRO), etc.
- Remain a continuous program and project-specific resource for the community, project manager and Estimating as needed after project is moved into project management and Estimating phase
- Ensure CPUC and SEC mandates are followed by providing accurate quarterly data.
- Act as an interface with other utilities regarding the Rule 20A Program. Answer questions dealing with the Program and PG&E internal processes to help facilitate the projects.
- Monitor all phases of active Rule 20A projects to identify and mitigate risks/delays to ensure commitment to community is on track.

Trench Lead

Cities or counties contemplating establishing an undergrounding program, even one limited to Rule 20A electric projects where the costs of the utilities' work are ultimately borne by ratepayers, should understand that this is ultimately a city or county project. It will require the support of public works and other city or county staff to manage these projects.

It is important to establish who will serve as the lead agency. The lead agency is responsible for trench design, including the composite drawings and the Form B, which delineates the costs for each trench participant. The lead agency is also responsible for the construction of the project; however, the lead agency responsibilities may be separated, with one agency responsible for design and another responsible for construction.

The electric utility is typically the lead agency. In some cases, the lead agency may be one of the other project participants (e.g., telephone company, city or county, another utility) taking into account such factors as:

- Extent and nature of other street improvements, such as street widening or storm drain upgrades being done by the city or county
- Amount of utility conversion work being required of a private developer
- Experience and resource capabilities of the other project participants

The selection of the trench lead is agreed upon by the city or county and the utilities. PG&E or the local government can serve as the trench lead, which the local government can do through their public works staff or through a designated contractor. They may also have a joint trench participant (such as AT&T) serve as the trench lead. PG&E serves as the default trench lead if the local agency or other utility choose not to. If another utility serves as the trench lead, it is because they were asked to by the local agency. PG&E's construction design standards need to be followed by the trench lead (e.g. adhering to the number of bends in conduit).

The trench lead also has the responsibility for the oversight of activities performed by project participants working in the same area. This is necessary to ensure the safety of the general public and to provide each participant with the opportunity to complete its work with minimal disruption.

Each utility will be responsible for system design and installation of its own cables, wires, and pad-mounted fixtures for the new underground system. Each utility will complete their engineering work necessary to prepare a utility composite drawing. This process typically begins with the electric utility, which then hands off its design drawings to the telecommunications utility, which in turn hands off to the cable company.

The joint trench lead is responsible for all of the project costs, some of which are reimbursable and/or shared by all participants as described in the Form B section below. They must follow prevailing wage or use union contracts. The joint trench lead must also follow all of PG&E's safety requirements pursuant to PG&E's Standard S-5453. One example of this is following PG&E's safety guidance for pre- and post-cross bore inspections.

The joint trench lead serves as the lead for preparing the composite drawing. Each project participant will complete the engineering work necessary to prepare a composite drawing. This process typically begins with PG&E, but can be initiated by a joint trench lead who completes the process in accordance with PG&E's design standards. This means that the electric layout is completed first. Once PG&E has completed its portion of work, the design drawings are provided to the telecommunications provider(s).

The joint trench lead's additional duties include obtaining confirmations from all joint trench participants, including a joint trench intent. They must also confirm the initial and final composites and the Form B with all participants. They must also coordinate with the cable company to identify power supplies and address that in the design.

Joint trench lead expenses that can be included in the Form B includes anything that affects the joint trench and joint trench participants. Reimbursement ratios are determined by PG&E document S-5453.

Initiation & Planning Phase

The project initiation and planning phase will typically take between three and twelve months and includes the following steps.

Confirm or Establish a General Enabling Ordinance

The first step to formalizing an underground conversion program is to confirm or establish a General Enabling Ordinance. This gives the city or county the authority to:

- Call public hearings to determine whether or not the removal of poles, overhead wires, and associated overhead structures within a proposed underground utilities district is justified by the general public's interest.
- Designate individual underground utility districts.
- Make it unlawful for any utility company to maintain overhead wires and associated structures in a completed underground utility district.
- Require property owners in an underground utility district to perform the work on their premises necessary to receive underground utility service, including providing the utilities the right of entry to perform modifications to the property owners' exterior overhead service panels, and to make installations to the physical property for the underground connections.

Once a city or county has adopted a General Enabling Ordinance, it can proceed with the creation of individual underground utility districts through passage of a resolution. This generally consists of the following steps:

Develop Draft Project Boundary Map

The area to be converted is clearly defined by a boundary map, which needs to be defined at the parcel level. The proposed project must meet the following general public interest criteria:

- Such undergrounding will avoid or eliminate an unusually heavy concentration of overhead electric facilities;
- The street or road or right-of-way is extensively used by the general public and carries a heavy volume of pedestrian or vehicular traffic;
- Wheelchair access is limited or impeded in a manner that is not compliant with the Americans with Disabilities Act;
- The street or road or right-of-way adjoins or passes through a civic area or public recreation area or an area of significant scenic, cultural, and/or historic interest to the general public; or
- The street or road or right-of-way is considered an arterial street or major collector as defined by the California Department of Transportation's California Road System functional classification system.

PG&E's role is to provide both technical and regulatory guidance so that the proposed location for the undergrounding project is technically feasible and meets tariff requirements.

Inform Other Utilities (Communication, Cable and Internet)

This provides an opportunity for other utilities to concur that the proposed project meets their respective tariffs. Additionally, this will allow an opportunity to surface any potential risks and begin initial conversations about resources and schedule. At a minimum, the other utilities will need a copy of the boundary map and the resolution if a resolution has already been passed.

Hold Verification Walk

Once the draft boundary has been defined, the project team should have a verification walk to reach consensus on the areas to be converted in addition to:

- Initiating initial discussion of potential trench routes with all project team members to start evaluating project risks and challenges
- Identifying suitable utility "riser pole" locations (the points at which the new underground systems connect to the utilities' overhead systems)
- Discussing proposed and existing public improvements and their impacts
- Identifying right-of-way requirements for transformers, switches, capacitors and other facilities
- Considering the impact of using Rule 20A funds for the installation of underground service lateral conversions and electric panel conversions
- Finalizing the project boundary

Develop Initial Estimate

PG&E will also provide an initial ballpark estimate based on the proposed project boundary. It should be noted that at this early stage in the project lifecycle, there are more unknowns than knowns, so this is a rough estimate only and is considered an Association for the Advancement of Cost Engineering (AACE) Class 5 Estimate[4] with a variability of +100% to -50%. The preliminary estimate is not a binding formal estimate, as it will continue to be refined through the project lifecycle and can increase or decrease depending upon the situation (e.g. number of joint trench participants, soil conditions, relocation of existing underground facilities, market driven change in labor and material costs, etc.).

Conduct a Public Hearing and Adopt an Ordinance

The criteria for what constitutes a public hearing as well as notification requirements for the public hearing should follow local ordinances.

The Electric Rule 20 Tariff requires that the local ordinance include at a minimum:

- That all existing overhead communication and electric distribution facilities in such district shall be removed;
- That each property served from such electric overhead facilities shall have installed in accordance with PG&E's rules for underground service, all electrical facility changes on the premises necessary to receive service from the underground facilities of PG&E as soon as it is available; and
- Authorize PG&E to discontinue its overhead service.

Entering PG&E's Work Plan

Once a city or county has adopted a General Enabling Ordinance and created individual underground utility districts through passage of a resolution, the Rule 20A project will be added to PG&E's multi-year workplan. The number of projects that are executed each year in PG&E's workplan is limited by the annual budget. PG&E generally executes projects in order of when the General Enabling Ordinance was passed. In the event that other public improvement projects related to the Rule 20A project are reliant upon time-bound grant funding, please inform your project liaison as soon as possible. They will do their best to accommodate your project schedule; however, no guarantees can be made.

[4] Additional information regarding AACE can be found in the Estimates section of this guidebook

Sign Agreements

Before work begins on a Rule 20A project, the city/county needs to sign the General Conditions Agreement. This document provides more detail on what local agency responsibilities are and what PG&E's responsibilities are for a Rule 20A project. A sample General Conditions Agreement can be found in Appendix C of this document.

- Following the passage of the local ordinance formally adopting the underground district, PG&E requires four documents to be signed.
    - General Conditions Agreement: A document outlining what the municipality's responsibilities are and what PG&E's responsibilities are on a project.
    - Streetlight Agreement: A document where the city identifies how they will handle the streetlights in the district. Often, streetlights are attached to the utility pole that will be removed as part of the project.
    - Panel Conversion Agreement: An agreement the local agency signs authorizing PG&E to handle the panel conversion work on a project.
    - Wheelchair Accessibility Agreement: An acknowledgement that wheelchair accessibility was taken into consideration when forming a Utility Underground District (UUD).

Engineering & Design Phase

Once an ordinance is adopted and agreements are signed, PG&E will determine if there are enough credits to proceed and will authorize funding for a base map, service book and engineered estimate, if appropriate. As the estimate is updated during the project lifecycle, PG&E will compare it to available work credits to make sure the proposed project continues to be financially viable. PG&E will continue to keep the agency informed and work to find solutions if the estimate exceeds available work credits.

Two estimates are provided: the engineered estimate and the bid estimate. It should be noted that this phase of the project has the highest risk for delays as it requires a significant amount of information gathering, decisions, and agreements from the city, other utilities, and property owners. Two critical documents needed for an accurate design is the base map and service book.

Develop Base Map

PG&E will be responsible for the development of the base map. A comprehensive base map is a key component to having a successful undergrounding project. The base map will be utilized to develop the location of the new underground system for all parties.

The base map is an AutoCAD file of the project area. Local governments' active engagement in base map development can help expedite the development process. It's recommended cities and counties consult with internal departments to provide the needed information for base map development.

Examples of needed information for the AutoCAD map include:

- District Boundary (Should encompass entire lot of all lots fronting project & preferably in a bold line font)
- Roads / Streets (Including names)
- Power Poles / Communication Poles
- Future Road Improvements (Including streetlight locations if apply)
- Sidewalks (Where applicable)
- Curb / Gutter (Where applicable)
- Property Lines / Parcels with Assessor's Parcel Number (APN) /Addresses
- Building Footprint
- Existing Water/Sewer/Storm Drain
- Existing Easements
    - Known Rights Of Way
    - Known Public Utility Easements (PUE)
- Other Known Obstacles
    - Underground Utilities
    - Abandoned facilities
    - Enclosures
    - Pedestals
    - Fire Hydrants
    - Streetlights
- Optional Items (These would provide great value and save design time)
    - Aerial Map
    - Topographic Map
    - Electric Meter Locations
    - Station Numbering
    - Survey Monuments

Develop Service Book

A part of an undergrounding project is to convert existing customers who are currently receiving service through an overhead connection to an underground service. To do this, PG&E will need to extend service laterals as well as conduct electric service conversions. The Service Book details those plans per property.

PG&E will be responsible for the development of the Service Book. The Service Book will detail the specific location of any equipment, such as a termination enclosure, that needs to be attached to each home/business that will be converted to receive service underground.

Additionally, the Service Conversion Book will provide the approximate location of the service trench that will be required to provide underground service to the customer.

Development of the Service Conversion Book allows for detailed information on each property to be gathered early so that all the necessary work to convert customers from overhead to underground service is documented and can be included in the scope of the project.

Information in the Service Conversion Book will also be utilized later in the project lifecycle to obtain signed permission from each property owner to allow PG&E to attach the necessary equipment to each home/business that is to be converted.

Streetlight Plan

Depending upon the election of the streetlight agreement, the municipality may need to determine if they are also going to be a joint trench participant and, if so, provide a detailed streetlight plan. PG&E's preference is to receive this information in an AutoCAD format detailing the streetlight locations, boxes and any other facilities required to energize the streetlights. We encourage municipalities to develop streetlight plans early so that they can be incorporated into the final design and minimize any risks to construction or schedule.

Joint Trench Intents

The joint trench intent is sent to potential joint trench participants along with the proposed electric trench route on a base map that identifies curbs/gutters and other known facilities. Potential joint trench participants would then indicate whether they intend to be a joint trench participant and provide information regarding the number of conduits or pieces of equipment, location, size of conduit, and technical specifications. Responses are requested within thirty days of receiving the joint trench intent request.

Composite Drawing

A composite drawing is prepared by the joint trench lead and combines all joint participants' drawings into one combined drawing. The final composite drawing must be formally approved by all joint trench participants.

Form B

The Form B details cost responsibilities of each joint trench participant by segment. The Form B is developed with the final composite drawing and must be signed off by all joint trench participants before the project can move forward. Form B may be referred to as the Joint Trench Cost Sharing Agreement.

Easements

Easements are required for PG&E facilities that will not be in the county/city's right-of-way. PG&E first needs to develop the electric design before the location of the easements can be determined. Once the locations are determined, PG&E will prepare the easement documents and attempt to secure signatures. If PG&E is not able to acquire signed easements, the municipality will be asked to assist in securing the rights.

This easement acquisition process is based on the new General Conditions Agreement.

Engineering Estimate and Electric Drawing

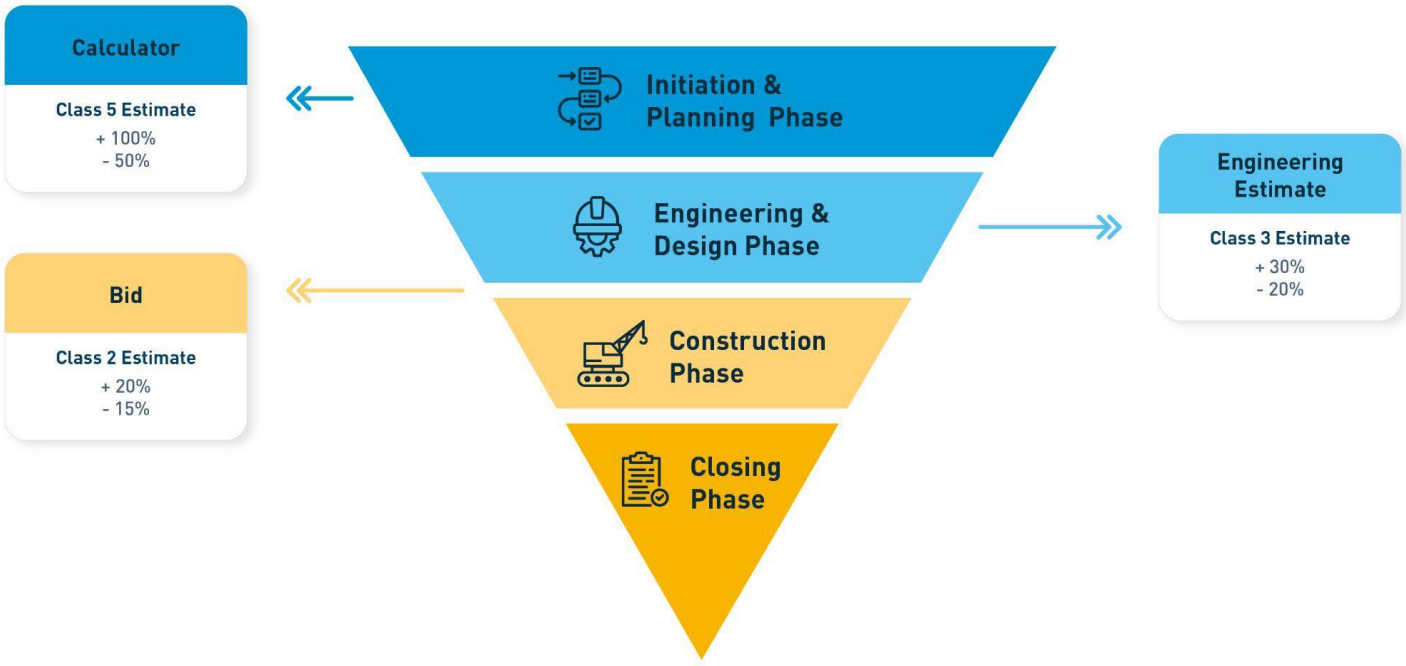
The engineering estimate and the electric drawing, detail how to convert the overhead facilities to underground facilities. It includes a breakdown of costs based on historical unit costs and PG&E's design standards. The engineering estimate may not take into account current market conditions nor may it reflect constructability challenges and mitigation measures. The engineering estimate is considered an AACE Class 3 estimate.

Once an engineering estimate is available, it will be compared against the community's available work credits to determine if the project can still move forward with the current scope. If the engineering estimate exceeds available work credits, then further discussions with the Rule 20A liaisons is required.

Estimates

The estimates are updated as more detailed, project specific information becomes known. The first estimate, the initial estimate, is conducted during the planning phase of the process. For more information on the planning phase, please visit the planning section above. It is important to note that estimates can be subject to external factors over which PG&E and the city or county have no control, such as market rates for construction labor and materials at the time an estimate is generated. An image demonstrating how estimates are refined during the lifecycle of a Rule 20A project is included below for reference.

The Refinement of Estimates During a Rule 20A Project



Initial Estimate

Sometimes referred to as a ballpark estimate, an initial estimate is based on preliminary project details and historical data. It uses general known project parameters—such as main trench length—multiplied by the anticipated cost per foot. The agency must first submit the project boundary map to PG&E before an initial estimate can be completed. The preliminary estimate is not a binding formal estimate, as it will continue to be refined through the project lifecycle and can increase or decrease depending upon the situation (e.g. number of joint trench participants, soil conditions, relocation of existing underground facilities, market driven change in labor and material costs, etc.). This estimate is +100/- 50%, meaning a project with an initial estimate of $1,000,000 could end up costing between $500,000 and $2,000,000.

Once the initial estimate is developed, PG&E will determine if there are enough credits to proceed and will authorize funding for a base map, service book and engineered estimate, if appropriate. As the estimate is updated during the project lifecycle, PG&E will compare it to available work credits to make sure the proposed project continues to be financially viable. PG&E will continue to keep the agency informed and work to find solutions if the estimate exceeds available work credits.

Engineered Estimate

The engineered estimate requires extensive coordination with the local agency, the project manager, trench participants and PG&E Associate Distribution Engineer. It is made using an electric diagram, civil composite, base maps and known unit costs. This is an Association for the Advancement of Cost Engineering (AACE) Class 3 estimate. This estimate is also known as the 25 percent design or basis of design report,

There are several factors in the engineered estimate that are important to determine overall project viability and to maintain the project schedule, among them being easement acquisition. The municipality's active involvement in easement acquisition is vital as PG&E needs support from the agency to determine landowners to be contacted about easement acquisition and other details. When a local government is not as heavily involved, project delays may occur, as there are certain steps the local agency is responsible for such as making initial contact with impacted property owners, mailing prepared easement documents to PG&E and coordinating meetings to assist PG&E in the easement acquisition process. Rule 20A credits cannot be used to obtain an easement, if compensation is required it is up to the municipality to provide.

Additionally, the Form B needs to be approved and signed by all of the joint trench participants before a project can go out to bid. Other utilities' active involvement is essential for the timely completion of this work, and delays beyond PG&E and the local agency's control can sometimes occur based on when the other utilities review the designs.

Bid Estimate

The bid estimate is derived after the contract for the project is awarded before the start of construction. This is the best estimate for the total project cost, which includes market rates for both labor and material at the time of its generation. Any additional costs beyond this point would require authorized change orders. Also known as a control or bid/tender estimate, this is a 60% design or AACE Class 2 estimate.

Work credits will be deducted from the agency's balance based on the actual cost of the project at its conclusion and not based on any estimates.

Construction Phase

The construction phasing sequence for an undergrounding process is as follows:

- Trenching: This is the phase where trenching occurs, and conduit and substructures are installed.
- Restoration: The act of restoring paving and sidewalk in the areas impacted by construction. This typically starts near the end of installing conduits and substructure, and continues through the end of the construction phase.
- Electric construction: This includes pulling wire, installing electric equipment and splicing.
- Energizing electric underground system: Once the underground electric construction has been completed with facilities installed, the underground system is energized. A planned outage (clearances) can be expected.
- Service cutovers: Electric overhead service is removed, electric panels are converted to receive underground service, the underground service is connected to the panel and the service is energized.
- Overhead electric wreck out: This involves de-energizing the electric overhead system, removing the overhead electric facilities, and topping the poles above the communication cables.
- Pole removal: Removal of the pole and restoration at the base of the pole is typically done by the telecommunication company.

Customer Contact/Communication

PG&E will be in contact with the customers to notify them before property access is needed and before trench work begins. Further, we will coordinate with the customer on service interruption logistics prior to the conversion from overhead to underground. A local agency's active involvement in communicating construction details to residents, including informational signage around the job site, is extremely helpful for Rule 20A projects.

Active local government involvement is encouraged for expediting Rule 20A processes, including:

- Educating the public about the project
- Providing contact information for the property owner of a particular parcel so they can sign a private property agreement, as PG&E records include the customer of record at addresses (who could potentially be a tenant)
- Inspecting work before PG&E provides electricity from an underground source (permitting requirements vary by local agency, but while not required it is strongly recommended)

Service Laterals and Service Conversions

The undergrounding of overhead service laterals and panel conversions are handled under the provisions of the electric utilities' and telephone utilities' tariffs. If the municipality chooses to handle their own service laterals and service conversions, PG&E requests that reimbursement requests from individual property owners are consolidated by the municipality.

Service laterals extend from a service point, which is part of the utility company's distribution lines, to the service delivery point on each customer's premises.

If PG&E is the lead, PG&E typically will dig a trench for the service lateral. We will work to minimize impacts to the customer's property and will restore the property to the previous state or better upon completion.

All customers within the utility underground district must receive power service from the underground system. Some customers' panels have the ability to receive underground service directly. For those customers who are unable to receive underground service, PG&E typically installs an electric termination enclosure (also referred to as a term can) on the customer's wall near the existing electric panel, which converts underground service to overhead service. Prior to installation of the term can, PG&E will get written permission to install the facility from every property owner.

Closing Phase

The closing phase of a project typically takes between 6 and 12 months to complete. This phase is a critical step to ensure the new underground infrastructure is accurately documented to ensure the new facilities can be correctly marked and maintained. The closing phase also officially closes the order so that there can be no additional charges. Once the project is formally closed, equivalent work credits are deducted from the community's work credit balance.

Initiating Rule 20B and 20C Project

Rule 20B provides limited ratepayer funding for undergrounding utility lines in areas that do not qualify under Rule 20A or in cases where there are not sufficient allocations to cover the costs of the project.

Rule 20C projects are conversions that are funded almost entirely by those requesting the underground conversion. This program enables property owners to pay for the cost of undergrounding utility lines, which do not qualify under Rule 20A or 20B.

A Rule 20B or Rule 20C project will include the following steps:

- If available, the project applicant should work with the appropriate parties to obtain civil plans (e.g. street plans, existing utility plans, storm drain plans, etc.) for the application.
- The applicant will prepare and submit the project application through PG&E's online application portal, which can be found at pge.com/cco.
- PG&E's service planner will review the request and will respond to the applicant within 3 business days.

Property Owner Authorization

A Rule 20B project needs "suitable legislation" or written authorization from each impacted party confirming their participation in the project in order for it to start. If a group of property owners coalesce to underground utility lines, all parties must agree to it. Alternatively, a supermajority of property owners can create an Underground Utility District pursuant to local government code.

The applicant is ultimately responsible for collection of signature or written authorization from each impacted party confirming their participation in the project prior to submit the project application through PG&E's online application portal.

Deposits

An applicant is required to put down an engineering advance for a project. If the municipality allows it, Rule 20A work credits can be used as an engineering advance for a Rule 20B project. If they chose not to go forward with the project, they must still pay the engineering advance. If the engineering advance remains unpaid, Rule 20A work credits would be taken as collateral via a resolution. More information on this can be found in Electric Rule 20.B.4.

The engineering deposit will be for engineering efforts completed by PG&E. If the applicant chooses to have the engineering for pads, vaults, conduits, ducts, boxes, pole bases, structures and substructures completed by a third party, those contracts will not be managed by PG&E.

Contracts and Costs

Once engineering is complete, a local agency has 2 ½ years to determine whether to move forward with the project. PG&E is able to make a demand of the local agency, which must be addressed within 90 days of initiation.

PG&E presents a contract with costs, which are good for 90 days. Once we issue a design and a contract, the design is locked down for 18 months pursuant to AB 1026 (November 2020). If not contract costs are not paid within 90 days, PG&E holds the right to reevaluate the costs according to current labor and material rates.

For the project to move forward, the applicant needs to pay for the engineering advance. Electric Rule 20.B.5., has additional information about how much ratepayer contribution goes into a project, such as the removal of overhead poles and facilities.

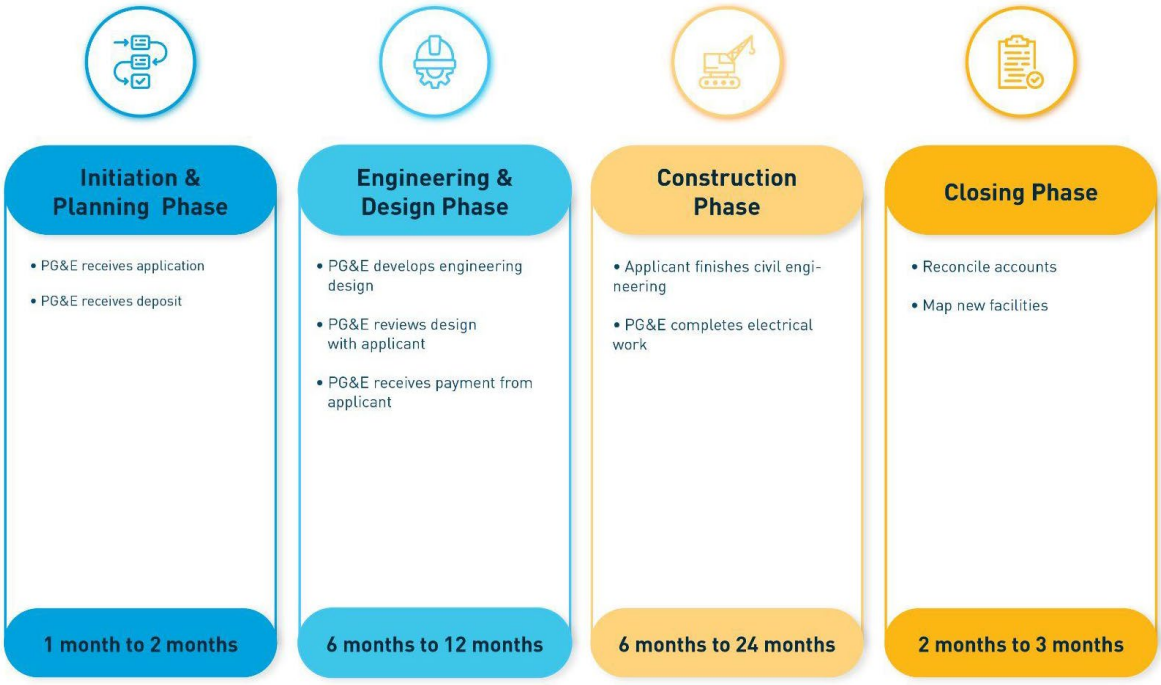
Rule 20B Projects

If Rule 20A does not apply in a specific case, Rule 20B enables ratepayers and property owners; ratepayers and cities/counties; or developers to fund underground conversion projects. Rule 20B projects require the undergrounding of the existing overhead lines up to the meter

In the case of Rule 20B projects funded by ratepayers and property owners or cities and counties, this program provides for two general ratepayer subsidies or credits:

- The first credit is for the amount of what constructing a new overhead system would cost.
- The second credit is for absorbing the cost to remove the existing overhead system.
- The maximum credit available is not to exceed the cost of the new underground system.

The affected customers must pay for the cost to underground in advance. These advances paid to PG&E are non-refundable, and if applicable, may include a tax component called the Federal Income Tax Component of Contribution (ITCC). In cases where the project is shown to be of general public benefit, this tax may be waived. The general timeline for Rule 20B and 20C project phases is below:



Qualifying Criteria

Under Rule 20B, the utility will replace its existing overhead lines with underground lines along public streets and roads or other locations mutually agreed upon when requested. However, the following conditions indicated in the Tariff must be met:

1. *The following must be met:*
    a) *All property owners served from the overhead lines to be removed first agree, in writing, to have the wiring changes made on their premises so that service may be furnished from the underground distribution system in accordance with the utility's rules, and that the utility may discontinue its overhead service upon completion of the underground facilities; or*
    b) *Suitable legislation is in effect requiring such necessary wiring changes to be made and authorizing the utility to discontinue its overhead service.*
2. *The applicant (city, county, property owners, developer) has:*
    a) *Furnished and installed the pads and vaults for transformers and associated equipment, conduits, ducts, boxes, pole bases and performed other work related to structures and substructures including breaking of pavement, trenching, backfilling and repaving required in connection with the installation of the underground system, all in accordance with the utility's specifications, or, in lieu thereof, paid the utility company to do so.*
    b) *Transferred ownership of such facilities, in good condition, to the utility.*
    c) *Paid a nonrefundable sum equal to the amount of the estimated costs of completing the underground system minus the amount it would have cost to build a new equivalent overhead system.*
3. *The area to be undergrounded includes both sides of the street for at least one block or 600 feet, whichever is the lesser.*
4. *All existing overhead communication and electric distribution lines within the area will be removed.*

City or County-initiated and Managed Rule 20B Conversions

A city or county may wish to convert an area using a combination of Rule 20A and Rule 20B funds to apply to contiguous project areas. Rule 20B funds are normally acquired from the city or county's general fund through the formation of a local assessment district or from a developer improving property adjacent to the conversion project.

A city or county may also utilize Rule 20B to carry out undergrounding of projects that would qualify for Rule 20A funding, but where the city or county does not have sufficient allocations to pay the cost. Rule 20B is also the mechanism used by cities or counties in support of neighborhoods that do not qualify for Rule 20A funding.

These are typically residential neighborhoods. In this case, the mechanism used to pay for the project – which is not discussed in the tariff Rule itself – is an assessment district. The city or county would initiate the project with the utilities. This approach imposes administrative cost on the city or county and requires a public vote.

Neighborhood-initiated and Managed Rule 20B Conversions

Property owners along one block or more who agree to pay for an underground conversion may either form an assessment district or enter into written agreements with the involved utilities.

Rule 20B Conversion by Assessment District

In 1966, state legislation was passed that provides that the conversion of overhead electric and communication facilities can be accomplished through an assessment district under the Improvement Act of 1911 (refer to Streets and Highways Code, Sections 5896.1 through 5896.17). The formation of an assessment district involves added costs to the applicants, but may be necessary in cases where unanimous agreement of the affected property owners cannot be obtained.

The formation of an assessment district generally involves the following:

- The signing of a petition for underground conversion by the affected property owners.
- The adoption of a resolution of intention to form an assessment district by the council or board of supervisors.
- Public hearing on the resolution of intention.
- A decision and resolution by the council or board of supervisors forming the assessment district.
- The negotiation of an agreement between the assessment district and each affected utility which includes, among other things, the responsibility for the following:
    - plans and specifications
    - labor and materials
    - payment for the work performed

Conversions Required by Public Agencies

Under existing law, no town, city, county, redevelopment agency, aviation, scenic highway or coastal commission, nor any other public agency may require a regulated private utility to convert its facilities to underground contrary to a utility's tariffs on file with the CPUC.

Such agencies may, however, require applicants for building permits to arrange for undergrounding as a condition of issuance of the permits. Some cities and counties require either the undergrounding or the installation of conduit for future undergrounding use from the service entrance to the public right of way.

Developer Contributions

In most cities and counties, the development of private property triggers some form of contribution from the developer for related street improvements.

In cities and counties that experience high rates of growth, Rule 20A work credits may not be adequate to keep pace with construction activity. In this situation, some cities or counties have required the developer to contribute a substantial portion of the actual conversion costs, even when the overhead utility lines are located on the street side opposite the development. Additionally, it may be made a condition of the development.

In these cases, there is no equivalent overhead system cost subsidy and no waiver of ITCC tax.

Development Fees

Some cities and counties have adopted underground conversion fees that apply to new developments in much the same manner as park fees and street improvement fees. Keep in mind that a fee-supported plan should include:

- The manner in which conversion fees are to be collected
- The purpose for which fees may be used by the city or county

The creation of a revolving fund is generally an integral part of any conversion fee program to provide a funding pool into which fees can be deposited and conversion project costs withdrawn.

The adoption of a conversion fee program often raises sensitive issues that can only be addressed at the local level. For instance, the community will need to decide whether the collection of conversion fees is triggered solely by new construction or includes the rehabilitation or expansion of existing properties.

The CCO Online Portal has additional information on the application process, required documents and next steps.

Rule 20C Projects

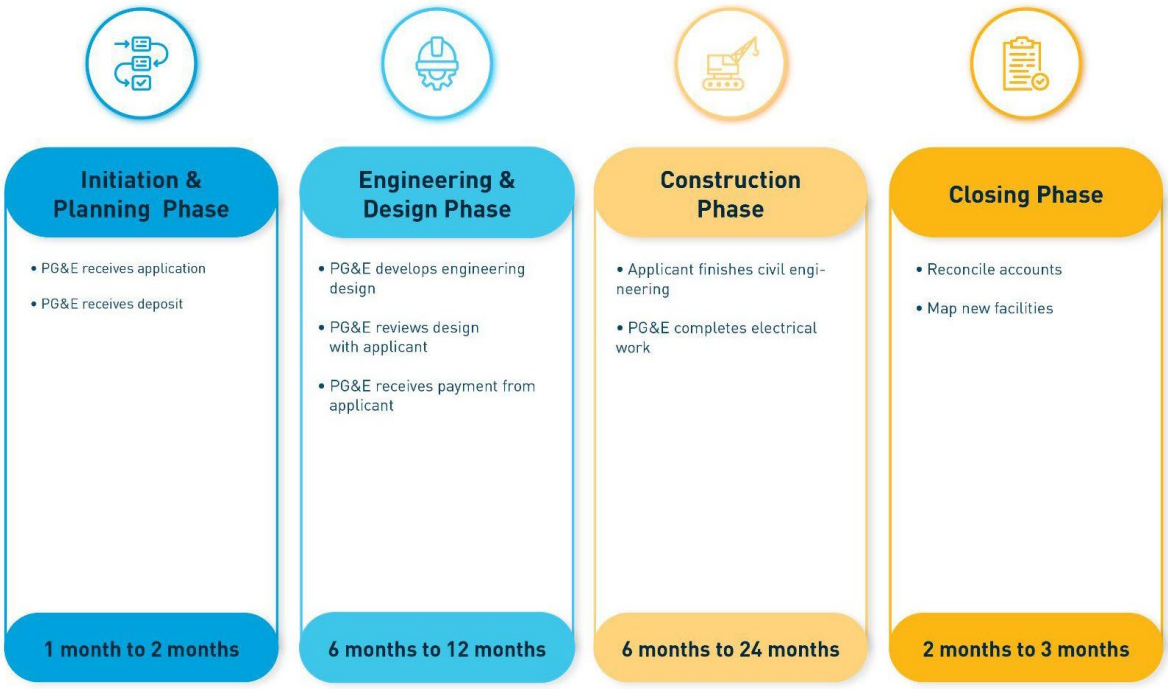
If neither Rule 20A nor Rule 20B apply to a specific case, Rule 20C enables property owners to pay for the cost of undergrounding distribution lines. This underground conversion program is almost entirely funded by those requesting the underground conversion and requires the undergrounding of the existing overhead electrical lines up to the meter.

Like Rule 20B, Rule 20C only applies if required by the municipality's code or by necessity as determined by PG&E. This includes because of sidewalks or equipment located at a street intersection that could cause a visual obstruction. If required by necessity, PG&E will cover the one-time maintenance fee for the project.

Under Rule 20C, the applicant requesting the changes pays for:

- The removal of existing overhead electrical facilities
- A nonrefundable sum in advance equal to the estimated cost of the underground facilities less the estimated net salvage value and depreciation of the replaced overhead lines and equipment.

The general timeline for Rule 20B and 20C project phases is below:



Applicant Responsibilities

For a Rule 20C project, the applicant's responsibilities include, but are not limited to:

- Trenching
- Substructures (e.g. conduit, pads and boxes)
- Civil design
- Permitting

In addition, Rule 20C has the same construction responsibilities as Rule 20B described in this guidebook. These are also included below for reference:

The applicant (property owner) has:

- Furnished and installed the pads and vaults for transformers and associated equipment, conduits, ducts, boxes, pole bases and performed other work related to structures and substructures including breaking of pavement, trenching, backfilling and repaving required in connection with the installation of the underground system, all in accordance with the utility's specifications, or, in lieu thereof, paid the utility company to do so.
    - Transferred ownership of such facilities, in good condition, to the utility.
    - Paid a nonrefundable sum equal to the amount of the estimated costs of completing the underground system minus the amount it would have cost to build a new equivalent overhead system.

As with Rule 20B, the CCO Online Portal link has additional information on the application process, required documents and next steps.

Change Record

The following table is a record of all changes made to the PG&E Rule 20 Guidebook. It describes the location of the revisions and what revisions were made:

Change Record Log

Section	Change
Initiation & Planning Phase (p.18)	**Add:** Entering PG&E's Work Plan Once a city or county has adopted a General Enabling Ordinance and created individual underground utility districts through passage of a resolution, the Rule 20A project will be added to PG&E's multi-year workplan. The number of projects that are executed each year in PG&E's workplan is limited by the annual budget. PG&E generally executes projects in order of when the General Enabling Ordinance was passed. In the event that other public improvement projects related to the Rule 20A project are reliant upon time-bound grant funding, please inform your project liaison as soon as possible. They will do their best to accommodate your project schedule; however, no guarantees can be made.
Initiating Rule 20B and 20C Project (p.27)	**Removal:** In the case of developer-driven Rule 20B projects, there is no ratepayer funding. **Updated Paragraph:** Rule 20B provides limited ratepayer funding for undergrounding utility lines in areas that do not qualify under Rule 20A or in cases where there are not sufficient allocations to cover the costs of the project.