

**City of Berkeley
Utility Undergrounding Subcommittee
of the
Public Works Commission**

MEETING AGENDA

Subject: Utility Undergrounding
Date: July 28, 2016, 4:00 – 5:30 pm
Location: Elm Conference Room
1947 Center Street, 4th Floor

1. Call to Order and Roll Call
2. Comments from the Public (3 minutes each speaker)
3. Discuss/Action:
 - A. Review the June 23, 2016 meeting notes (attached)
 - B. Status report on Harris and Associates baseline report (Ken Emeziem)
 - C. Review draft project descriptions for U.C. Berkeley's Goldman School of Public Policy (attached)
 - D. Discuss visits to cities with undergrounding programs
 - E. Next meeting
4. Adjournment

An agenda packet is available for public review at the Engineering Division front desk.

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Acting Commission Secretary:

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Utility Undergrounding - meeting notes

Meeting Date/Time: June 23, 2016, 4:00 pm

Meeting Location: Elm conference room

Attending:

Affiliation	Team Member	Affiliation	Team Member
Public Works Commission (PWC)	Ray Yep ✓	Public Works Department	Phil Harrington
	Larry Henry ✓		Tracy Clay
	Nick Dominguez ✓		Ken Emeziem ✓
Disaster & Fire Safety Commission (DFSC)	Bob Flasher ✓	Harris & Associates	Rocco Colicchia ✓
	Victoria Legg ✓		
	Paul Degenkolb		
Transportation Commission (TC)	Tony Bruzzone ✓		
	Ben Gerhardstein		

✓ Indicates present at meeting

Meeting Notes

1. Subcommittee Chair Ray Yep called the meeting to order at 4:00 pm.
2. Public comments:
 - Sam Ginsberg attended from the public. He provided comments regarding Harris’ draft report.
 - Mark Gilligan commented that the impacts of landslide areas should be factored into the consideration of undergrounding utilities.
 - Laura and Chuck Clemons attended and did not make comments.
3. The notes from the May 26, 2016 undergrounding subcommittee meeting were reviewed and no exceptions were noted.
4. Harris and Associates’ (Harris) work progress:
 Rocco Colicchia was at the meeting and he presented an overview of Harris’ draft report. He reported that the 1st draft submitted was an outline of the report and was not intended for our review. The 2nd draft is their real draft report. He said that their cost estimates do not include house hook ups. The cost estimates had staff conduct field drive byes to estimate cost impact factors. These were conducted on the arterial and collector streets. Rocco said that he read Larry’s historical summary write-up and made minor edits. The following comments were made:
 - Larry – should include information on which residential streets have been undergrounded. Also, describe how many years it will take to underground the arterial and collector streets.
 - Tony – should add language on the cost of hookups. Discuss the efficiencies on packaging undergrounding with other projects, such as paving. Solar is increasing; how do micro-grids affect undergrounding? Minster Ohio is an example.

- Nick – should coordinate with other programs. Indicate if the construction is done in private or public property.
 - Victoria – should include information on San Diego’s program.
 - Paul – does the cost include street lighting? Rocco said no.
 - Bob – should consider Sam Ginsburg’s comments.
 - Ray – asked that everyone submit written comments on Harris’ report to Ken Emeziem by July 1st.
5. UC Berkeley Goldman School:
Paul and Nick volunteered to draft the project descriptions for review at our July meeting. Since our subcommittee will not meet in August, we need to be ready to meet with the Goldman school in September.
6. Program plan:
Ray asked for comments on our Program plan. We will plan to submit to City Council in December.
7. Visits to cities with undergrounding programs:
Ray said that he will be researching cities to visit with undergrounding programs. He asked for interest to attend.
- Victoria would be interested in local cities only.
 - Bob will pass on the visits.
 - Nick might have interest.
 - Larry, Tony, and Paul have general interest.
8. Next meetings:
A. Our next meeting will be on Thursday, July 28, 4:00 pm, at 1947 Center Street.

The meeting was adjourned at 5:30 pm.

End of notes.

City of Berkeley

Comprehensive Plan for Funding of Undergrounding Utility Wires in Berkeley

Subject: Project descriptions to U.C. Berkeley's Goldman School of Public Policy for Phase 2A – Conceptualize the Undergrounding Program

Date: July 25, 2016

By: City of Berkeley's Public Works, Disaster and Fire Safety, and Transportation Commissions

The Berkeley City Council has asked the Public Works, Disaster and Fire Safety, and Transportation Commissions to develop a comprehensive plan for the funding of undergrounding utility wires in all major and collector streets in Berkeley. The following is Berkeley's phased programmatic approach.

Phase 1: Prepare Baseline for the Undergrounding Program (Harris and Associates)
This phase will develop baseline information for the undergrounding program. The work shall focus on the arterial and collector streets in Berkeley and include:

- Summarize the history of undergrounding in Berkeley
- Develop preliminary cost estimate for undergrounding
- Review available funding alternatives
- Summarize what has been done in other cities
- Summarize the status of 20A, 20B, and 20C funding in Berkeley
- Summarize the pros/cons of undergrounding the arterial and collector streets
- Prepare a report of the findings

Phase 2: Conceptualize the Undergrounding Program
This phase will conceptualize some of the broad longer term issues facing the undergrounding program in Berkeley. This phase will be completed in two parts, as follows.

Phase 2A (by Goldman School of Public Policy)

This phase will utilize the expertise of the U.C. Berkeley Goldman School of Public Policy in these key study areas:

Study Area 1 – Future Technologies

This component will evaluate how PG&E, service providers (such as Comcast, AT&T, etc.) and street lighting may change in the next 50 years. This will help with forecasting the type of undergrounding methods to be used and the type of above ground poles that will remain. The work will involve talking with PG&E, utility providers, and research into technologies.

Study Area 2 – Funding Alternatives

This component will evaluate the range of funding alternatives for Berkeley to consider in implementing an undergrounding program. Included shall be:

- Range in cost of funding needs
- Long term bond financing
- Revenue generation potential from utility corridors
- Utility service charge funding
- Options for home owner funding
- Pros/cons of funding alternatives used by other cities
- Other

Study Area 3 – Benefit/cost Analysis and social/geographic equity

This component will evaluate the benefits and costs of an undergrounding program. The benefits shall include:

- Value of greater emergency access in an emergency
- Value of avoided catastrophic financial losses from an emergency
- Changes to property values
- Possible health benefits from undergrounding power lines
- Aesthetic value of undergrounding power lines
- Other

Traditional methods of calculating benefit/cost ratios shall be used.

Also included shall be considerations for social/geographic equity for implementation. For example, the utility wires in the Berkeley hills are a hazard due to their proximity to earthquake faults and heavy vegetation. Undergrounding in these areas would not only protect the homes in the area, but the City as a whole. How would this and other examples be evaluated from a social/geographic equity viewpoint?

The work in Phase 2A shall be performed by the U.C. Berkeley Goldman School of Public Policy. The schedule for Phase 2A is from September 2016 to June 2017.

Phase 2B (by Public Works Department and Commissions)

This phase will pull together the work done in Phase 1 and Phase 2A into a cohesive Concept Plan for Berkeley. It is at this point where decisions should be made on the feasibility of undergrounding in Berkeley and if future studies are warranted. A summary report shall be written for the City Council's consideration. Included in the report shall be the following:

- Objectives for undergrounding
- Summary of utility undergrounding completed in Berkeley
- Summary of undergrounding programs by other cities
- Future technologies of utility and service providers
- Potential undergrounding corridors and costs
- Input from the public.
- Input from stakeholders.
- Recommendations for future studies, costs, schedule, and resources needed
- Decisions required of City Council and staff

This phase should also coordinate with the November 2016 infrastructure bond measure. The schedule for Phase 2B is from June 2017 to March 2018.

Phase 3: Comprehensive Funding and Implementation Plan (by others)

City Council approval of the Concept Plan is needed before moving forward with this phase. This phase will prepare a detailed Comprehensive Funding and Implementation Plan. The work scope shall include:

- Conduct a series of community meetings.
- Conduct a detailed evaluation of project funding and recommended actions.
- Prepare a detailed plan for implementation.
- Recommend organizational needs for implementation, including staffing and other resource needs.
- Prepare an overall program plan.
- City Council adoption of the Comprehensive Funding and Implementation Plan.
- Identification of voter requirements before proceeding.

The schedule for this phase shall be March 2018 to March 2019.

Phase 4: Program Implementation (by City of Berkeley)

This phase will implement the recommended undergrounding program. This will be a long term effort.

The following are the Phase 2A project descriptions proposed to be conducted by U.C. Berkeley's Goldman School of Public Policy. The descriptions are structured to respond to the following criteria.

- Project Description & Goals

What is the question you're trying to answer or the problem you're trying to solve? What analytic work will be required of students? If the public policy dimension is not self-evident, please summarize it briefly.

NOTE: Please keep in mind two points.

First, when proposing the project please note the timeframe and work effort available. Initial contacts and project scoping will begin in late January and the final report will be submitted in early May. Over those three months the student team is expected to spend 400 to 500 hours on the project.

Second: IPA reports are not just research papers; they are intended to help clients make policy or program choices. Clients should be in a position to take action to address a problem, or directly influence those who will take action. *

- Please briefly describe the work of your organization/ department as it relates to the project. In what way is your organization in a position to take action based on findings of the IPA?*

Phase 2A

Study Area 1 – Future Technologies

Project Description & Goals

The City of Berkeley is investigating the cost and advisability of moving overhead wiring underground. This action will have a number of benefits, both in terms of a friendlier environment, and in increased safety for the community as a whole. However, the process is fairly expensive, and during the process of the construction, will be disruptive to the community around the project. The primary technologies being undergrounded are power (which includes power for street lighting), telephone, Internet and cable TV. At this time, the primary study area is for performing the undergrounding process on arterial and collector streets in Berkeley. A further discussion is also ongoing about undergrounding the remainder of the streets in Berkeley. As part of the investigation, we are looking into the cost versus benefit of the project, which raises a number of issues. One issue that has been raised is how future technologies will affect the long term value of the project.

The question is how the technologies being undergrounded are likely to change in the next fifty years, and how those changes could be enhanced or degraded by the use of undergrounding. Suggestions for specific needs in undergrounding such as conduit size and vaults should be at least discussed. Technological changes which make undergrounding obsolete should also be studied. These include:

- The potential use of micro-grids and the impacts to power transmission lines.
- The trend to wireless internet service and the impacts to traditional and fiber optic cable transmission.
- Other

The primary technologies being undergrounded are power, Telephone, Internet and Cable TV.

Please briefly describe the work of your organization/ department as it relates to the project. In what way is your organization in a position to take action based on findings of the IPA?*

The Undergrounding subcommittee of the Public Works commission is tasked with preparing a recommendation to the Berkeley City Council on the advisability, cost and funding methods related to undergrounding utilities in Berkeley. This research report will be used as a basis for specific discussions within that report. Final approval of the undergrounding project, along with specifics of how it will be accomplished will be up to the City Council, but will be guided by the recommendations from this and other research projects.

Descriptive Project Title, under 15 words*

Determine the effect of new technologies on proposed utility undergrounding project.

Phase 2A

Study Area 2 – Funding Alternatives

Project Description & Goals

The City of Berkeley is investigating the cost and advisability of moving overhead wiring underground. This action will have a number of benefits, both in terms of a friendlier environment, and in increased safety for the community as a whole. However, the process is fairly expensive, and during the process of the construction, will be disruptive to the community around the project. The primary technologies being undergrounded are power (which includes power for street lighting), telephone, Internet and cable TV. At this time, the primary study area is for performing the undergrounding process on arterial and collector streets in Berkeley. A further discussion is also ongoing about undergrounding the remainder of the streets in Berkeley. As part of the investigation, we are looking into the cost versus benefit of the project, which raises a number of issues. One of these issues is funding. This component will evaluate the range of funding alternatives for Berkeley to consider in implementing an undergrounding program.

Funding alternatives that have been discussed include:

- Range in cost of funding needs
- Long term bond financing
- Transfer tax on real estate sales
- Revenue generation potential from utility corridors
- Utility service charge funding
- Options for home owner funding
- Pros/cons of funding alternatives used by other cities
- Any other options not included above, but which seem appropriate

Along with the sources of funding, there should be at least some evaluation of the equity of the funding. For instance, should the entire population be responsible for paying for the undergrounding even if parts of the city are not undergrounded? How does timing of the project (possibly a thirty year project) affect this?

Please briefly describe the work of your organization/ department as it relates to the project. In what way is your organization in a position to take action based on findings of the IPA?*

The Undergrounding subcommittee of the Public Works commission is tasked with preparing a recommendation to the Berkeley City Council on the advisability, cost and funding methods related to undergrounding utilities in Berkeley. This research report will be used as a basis for specific discussions within that report. Final approval of the undergrounding project, along with specifics of how it will be accomplished will be up to the City Council, but will be guided by the recommendations from this and other research projects.

Descriptive Project Title, under 15 words*

Evaluate sources and their pros and cons for funding the undergrounding of utilities in Berkeley.

Phase 2A

Study Area 3 – Benefit/Cost Analysis and Social/Geographic Equity

Project Description & Goals

The City of Berkeley is investigating the cost and advisability of moving overhead wiring underground. This action will have a number of benefits, both in terms of a friendlier environment, and in increased safety for the community as a whole. However, the process is fairly expensive, and during the process of the construction, will be disruptive to the community around the project. The primary technologies being undergrounded are power (which includes power for street lighting), telephone, Internet and cable TV. At this time, the primary study area is for performing the undergrounding process on arterial and collector streets in Berkeley. A further discussion is also ongoing about undergrounding the remainder of the streets in Berkeley. As part of the investigation, we are looking into the cost versus benefit of the project, which raises a number of issues. Two issues are the evaluation of the benefits and costs of and social/geographic equity of an undergrounding program.

To assist in this project, a Benefit/Cost Analysis needs to be performed. The costs and benefits being evaluated should be looked at both in terms of the entire city, but also in terms of individual communities. The benefits shall include:

- Value of greater emergency access in an emergency
- Value of avoided catastrophic financial losses from an emergency
- Change to property values
- Possible health benefits from undergrounding power lines
- Aesthetic value of undergrounding power lines
- Other

Traditional methods of calculating benefit/cost ratios shall be used, although alternatives may also be discussed.

Also included will be the social and geographic equity of any proposed undergrounding project. Where will the undergrounding have the greatest benefit to the city? Where will it have the least impact? What is the cost and benefits to the city as a whole, and what are the costs and benefits to the local community being undergrounded? If only part of the city is to be undergrounded, what benefits are gained by those not being undergrounded? For that matter, what have the costs and benefits of undergrounding been in those areas of Berkeley where it has already been accomplished?

Please briefly describe the work of your organization/ department as it relates to the project. In what way is your organization in a position to take action based on findings of the IPA?*

The Undergrounding subcommittee of the Public Works commission is tasked with preparing a recommendation to the Berkeley City Council on the advisability, cost and funding methods related to undergrounding utilities in Berkeley. This research report will be used as a basis for specific discussions within that report. Final approval of the undergrounding project, along with specifics of how it will be accomplished will be up to the City Council, but will be guided by the recommendations from this and other research projects.

Descriptive Project Title, under 15 words*

Perform a cost vs. benefit analysis of utility undergrounding in the city of Berkeley.