FEASIBILITY ANALYSIS REPORT OF STREETLIGHT SYSTEM OWNERSHIP TRANSFER, CONVERSION, AND MAINTENANCE OPTIONS FOR THE CITY OF CLEARLAKE, CA

Submitted by:

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EXECUTIVE SUMMARY

Introduction

Tanko Lighting was engaged by the City of Clearlake to develop a preliminary analysis of the ownership and operational options related to the streetlight assets located within the City. Currently, approximately 262 of these assets are owned and maintained by the City's local utility, Pacific Gas & Electric (PG&E), and paid for by the City of Clearlake. There are also approximately 13 City-owned streetlights within the system, which were included in the analysis.

Given the high cost of electricity and maintenance associated with utility ownership of the system, the City requested that Tanko Lighting explore the impact of municipalizing these assets, as well as the costs and benefits associated with potential ongoing direct ownership, operations, and maintenance of the streetlight system. If an ownership transfer is feasible, subsequent steps (such as an audit, data reconciliation, and appraisal) will confirm the fair and reasonable value of the streetlight system within the City of Clearlake.

Additionally, we analyzed options to remedy the fact that the City is chronically underlit.

Please note that this evaluation is intended to be a completely exploratory document. All outcomes are contextually viewed from a perspective of possible or potential. The information provided in no way leads to any predetermination of the City's approach. It is merely intended to be a guide, analyzing the financial and logistical hypothetical feasibilities of the various options presented.

Methodology

The Tanko Lighting team conducted the following tasks to determine the analysis:

- Streetlight Inventory Analysis
- Rate Analysis
- Streetlight Ownership Transfer Analysis
- Light Emitting Diode (LED) Conversion Analysis
- Streetlight Maintenance Analysis
- Cost/Benefit Analysis of Installing Additional Streetlights

Summary of Findings

We analyzed options for two different elements – ownership and potential remedies for the underlit streetlight system. Find summaries of the results below.

Streetlight System Ownership Options

- **Option 1**: **Ownership Transfer from PG&E to City, LED Conversion, Ongoing Maintenance**
  - With this option, ownership of the City's streetlight system will be transferred from PG&E to the City and the City would convert all remaining High Pressure Sodium (HPS) streetlights to LED, as well as be responsible for maintaining the entire streetlight system via either internal staff or a third-party qualified contractor. The standalone streetlight poles would be fully transitioned to City ownership. The distribution poles would remain owned by PG&E, but the arms and fixtures would be fully transitioned to City ownership.
  - Option 1 is estimated to cost the City approximately **$220,293** upfront for ownership and conversion.
  - This option results in approximately **59%** savings in its first year. The payback period is approximately **8.49 years** based on energy and maintenance savings, and the City would save an estimated total of **$476,481** based on the energy and maintenance savings over 20 years.

- **Option 2: Status Quo (Baseline): Continued Utility Ownership – No Action**
  - With this option, the City would continue with existing operations, and there would be no change to the City's streetlight system. PG&E will continue to own, operate, and maintain the existing system with this scenario. The City will have no direct oversight of the fixtures or design of the system, nor control over the efficiency with which they are maintained.

Options for Remedying Underlit Streetlight System

The City of Clearlake is chronically underlit compared to other municipalities of similar sizes in PG&E's territory. Based on the City's current size, we would expect to see approximately 1,000 streetlights in the system – which is significantly more than the current amount of 275 streetlights in the City. To remedy this, we estimated the costs and benefits of installing an additional 700 LED streetlights in the City. There are two options for this – see them listed below.

- **Option 1: PG&E-Sponsored Installation of Additional Cobra Head Fixtures, No Acquisition** –This option analyzed the financial impacts if PG&E were to install an additional 700 cobra head streetlight fixtures and continue to own and maintain the system. PG&E, in its sole discretion, will determine the timeline and order in which lights are installed.
  - Option 1 is estimated to cost the City approximately **$88,237** in energy/maintenance costs in the first year

- **Option 2: PG&E-Sponsored Installation of Additional Cobra Head Fixtures, City Acquisition** –This option analyzed the financial impacts if PG&E were to install an additional 700 cobra head streetlight fixtures, and the City would acquire and own/maintain these new fixtures. PG&E, in its sole discretion, will determine the timeline and order in which lights are installed. Additionally:
  - Option 2 is estimated to cost the City approximately **$299,600** upfront for the acquisition of the fixtures and approximately $**46,791** in energy/maintenance costs in the first year
  - This option results in approximately **47%** in installation cost savings, compared with Option 1, and the City would save an estimated total of **$707,596** based on the energy savings over 20 years compared with Option 1.

Recommendations

Based on these options, Tanko Lighting recommends that the City:

- Streetlight System Ownership Options:
  - Proceed with a further exploration of Option 1, which includes PG&E Streetlight Ownership Transfer to the City, LED Conversion, and Ongoing Maintenance, as the estimated annual and 20-year savings are significantly greater than Option 2 (the status quo). While Option 1 has initial upfront costs, the City would see significantly higher long-term savings with Option 1.
  - Conduct a comprehensive streetlight audit and utility inventory reconciliation to determine the actual quantities of fixtures in the field and their existing conditions.
- Options for Remedying Underlit Streetlights System:
  - Conduct a Streetlight Deficiency Analysis to determine recommended locations and quantities of additional cobra head streetlight fixture installations.
- Schedule a meeting or call with Tanko Lighting to review options and next steps.

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FEASIBILITY ANALYSIS REPORT

Project Background

Tanko Lighting was engaged by the City of Clearlake to develop a preliminary analysis of the ownership and operational options related to the streetlight assets located within the City. Currently, most of these assets are owned and maintained by the City's local utility, Pacific Gas & Electric (PG&E). Given the high cost of electricity and maintenance associated with utility ownership of the system, the City requested that Tanko Lighting explore the impact of municipalizing these assets, as well as the costs and benefits associated with ongoing direct ownership, operations, and maintenance of the streetlight system. If an ownership transfer is feasible, subsequent steps (such as an audit, data reconciliation, and appraisal) will confirm the fair market value of the streetlight system within the City of Clearlake.

The growing national trend in which municipalities are acquiring their streetlight infrastructure from their local private utility companies poses tremendous advantages to a municipality. Not only does it allow the municipality to control the management and maintenance of the system within its geographic borders, but it also involves significant cost savings – particularly related to maintenance and energy.

Historically in California, streetlight systems have been owned predominantly by investor-owned utilities (IOUs). Over the decades, some municipalities have purchased their streetlights from their respective IOUs. Both nationally and in California, the model proven to be the most advantageous for a municipality is the one in which it owns its streetlight system. Thus, this analysis of the feasibility of streetlight acquisition is an important step in the City's determination of its options.

Additionally, the City of Clearlake is chronically underlit compared to other municipalities of similar sizes in PG&E's territory. Based on the City's current size, we would expect to see approximately 1,000 streetlights in the system – which is significantly more than the current amount of 275 streetlights in the City. To remedy this, we estimated the costs and benefits of installing an additional 700 LED streetlights in the City.

For this feasibility analysis, Tanko Lighting reviewed approximately 262 streetlight assets owned and maintained by PG&E and paid for by the City of Clearlake. There are also approximately 13 additional City-owned streetlights within the system, which were included in the analysis. There are two sets of options included in this report:

- Streetlight System Ownership Options
  - Option 1 assumes all previously PG&E-owned streetlights will be purchased, converted to LED fixtures, and continually maintained by the City.
  - Option 2 assumes no LED conversion and a continuation of the status quo (PG&E ownership and maintenance of the PG&E-owned streetlights).

- Options for Remedying Underlit Streetlight System
  - Option 1 addresses the issue that the City is currently underlit by analyzing the result of PG&E installing an additional 700 cobra head streetlight fixtures throughout the City and PG&E continuing to own and maintain the streetlight system.
  - Option 2 compares this first option with a slightly altered scenario, in which the City would purchase the additional 700 streetlight fixtures once PG&E installs them, and the City would own/maintain these new fixtures.

Please note that this evaluation is intended to be a completely exploratory document. All outcomes are contextually viewed from a perspective of possible or potential. The information provided in no way leads to any predetermination of the City's approach. It is merely intended to be a guide, analyzing the financial and logistical hypothetical feasibilities of the various options presented.

Methodology

Tanko Lighting used the following methodology to complete this analysis:

- Inventory Analysis: Reviewed the City's March and April 2024 PG&E streetlight bills to determine the estimated current inventory.

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- Rate Analysis: Analyzed the current electricity rates and the potential new rates to calculate the estimated impact of transitioning ownership of the system and converting to LED fixtures.
- Ownership Analysis: Evaluated previous municipal streetlight ownership transfers in the City's utility territory and statewide history, including purchase price and depreciation of the assets. Incorporated estimated purchase price for the PG&E-owned system of approximately $39,300 total or approximately $150 per fixture. Incorporated estimated purchase price for the 700 LED streetlight fixtures of approximately $299,600 total or approximately $428 per fixture.
- LED Conversion Analysis: Developed budgetary estimates for the LED conversion costs based on average material, installation costs, and pricing in the City's region. Incorporated estimated conversion costs for a City-sponsored LED conversion of $28,963 total or approximately $105 per fixture (which includes LED conversion of both fixtures that would be purchased by the City from PG&E, as well as existing City-owned fixtures).
- Maintenance Analysis: Estimated budget for the (post-ownership transfer) maintenance services based on the nationwide industry standard of services, average pricing in the region, and number of pole replacements in a given year for outsourced maintenance options.

Options

We analyzed options for two different elements – ownership and potential remedies for the underlit streetlight system. Find these outlined below.

Streetlight System Ownership Options

- **Option 1: Ownership Transfer from PG&E to City, LED Conversion, Ongoing Maintenance**
  - With this option, ownership of the City's streetlight system will be transferred from PG&E to the City, and the City would convert all remaining High Pressure Sodium (HPS) streetlights to LED, as well as be responsible for maintaining the entire streetlight system via either internal staff or a third-party qualified contractor. The standalone streetlight poles would be fully transitioned to City ownership. The distribution poles would remain owned by PG&E, but the arms and fixtures would be fully transitioned to City ownership.
  - Further, with this option, the City would:
    - Transfer all streetlights on the utility-owned electricity rate (PG&E LS-1 rate) to a municipal-owned electricity flat rate (PG&E LS-2 rate), see appendix B for more details.
    - Eliminate the maintenance fees previously included in PG&E's LS-1 rate.
    - After the LED conversion of all remaining HPS fixtures, transfer to a (reduced) LED fixture electricity rate for that streetlight infrastructure.
    - Maintain the system via a qualified contractor.
    - Have the option to employ smart systems management and explore third party attachments.
  - Option 1 is estimated to cost the City approximately **$220,293** upfront for ownership and conversion.
  - This option results in approximately **59%** savings in its first year. The payback period is approximately **8.49 years** based on energy and maintenance savings.
  - The City would save an estimated total of **$476,481** based on energy and maintenance over 20 years.

- **Option 2: Status Quo (Baseline): Continued Utility Ownership – No Action**
  - With this option, the City would continue with existing operations and there would be no change to the City's streetlight system.
  - PG&E would continue to own, operate, and maintain the 262fixtures with this scenario.
  - For the streetlighting owned by PG&E, the City would continue to have no direct oversight of the fixtures or design of the system, nor control over the efficiency with which they are maintained.
  - Under the best-case option, the City's energy and maintenance costs would remain the same in future years.

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Options for Remedying Underlit Streetlight System

The City of Clearlake is chronically underlit compared to other municipalities of similar sizes in PG&E's territory. Based on the City's current size, we would expect to see approximately 1,000 streetlights in the system – which is significantly more than the current amount of 275 streetlights in the City. To remedy this, we estimated the costs and benefits of installing an additional 700 LED streetlights in the City. There are two options for this – see them listed below.

Note that there is an additional option not listed below – one in which the City directly sponsors the installation of the additional 700 streetlight fixtures. This could likely be done more cost effectively than if PG&E installs the fixtures. However, we understand that PG&E's fees to hook up the new fixtures (while currently unknown) can often be significant. Thus, we modeled the options based on a likely overall more cost-effective option of having PG&E sponsor the installations and then the City acquiring the fixtures. Note that there are legal fees associated with the acquisition (which were not estimated in this scenario nor in the Streetlight System Ownership Options – Option 1 scenario (above), as these are currently unknown). Still, if the acquisitions were coordinated simultaneously, these legal fees would not be dependent on the number of fixtures acquired but instead by the number of legal actions taken. Finally, note that the options below do not include any Tanko consulting fees associated with determining the recommended locations and design of any new fixture installations.

- **Option 1: PG&E-Sponsored Installation of Additional Cobra Head Fixtures, No Acquisition** – The City is currently underlit. This option analyzed the financial impacts if PG&E was to install an additional 700 cobra head streetlight fixtures and continue to own and maintain the system. PG&E, in its sole discretion, will determine the timeline and order in which lights are installed. With this option, the City would:
  - Pay a higher monthly rate than the customer-owned (LS-2) rate.
  - Continue to pay the high maintenance fee included in PG&E's LED LS-1 streetlight service rate
  - Option 1 is estimated to cost the City approximately **$88,237** in energy/maintenance costs in the first year

- **Option 2: PG&E-Sponsored Installation of Additional Cobra Head Fixtures, City Acquisition** – The City is currently underlit. This option analyzed the financial impacts if PG&E was to install an additional 700 cobra head streetlight fixtures, and the City would acquire and own/maintain these new fixtures. PG&E, in its sole discretion, will determine the timeline and order in which lights are installed. Additionally:
  - Ownership of the City's streetlight system will be transferred from PG&E to the City – after installation of the additional fixtures and upon the City's acquisition of the system.
  - The City would pay the PG&E-owned rate (LS-1) until ownership transfer, at which time the City would pay the monthly energy bills based on the customer-owned rate (LS-2) and be responsible for ongoing maintenance (via either internal staff or a third party qualified contractor)
  - Option 2 is estimated to cost the City approximately **$299,600** upfront for the acquisition of the fixtures and approximately $**46,791** in energy/maintenance costs in the first year
  - This option results in approximately **47%** in installation cost savings, compared with Option 1.
  - The City would save an estimated total of **$707,596** based on the energy savings over 20 years compared with Option 1.

Results

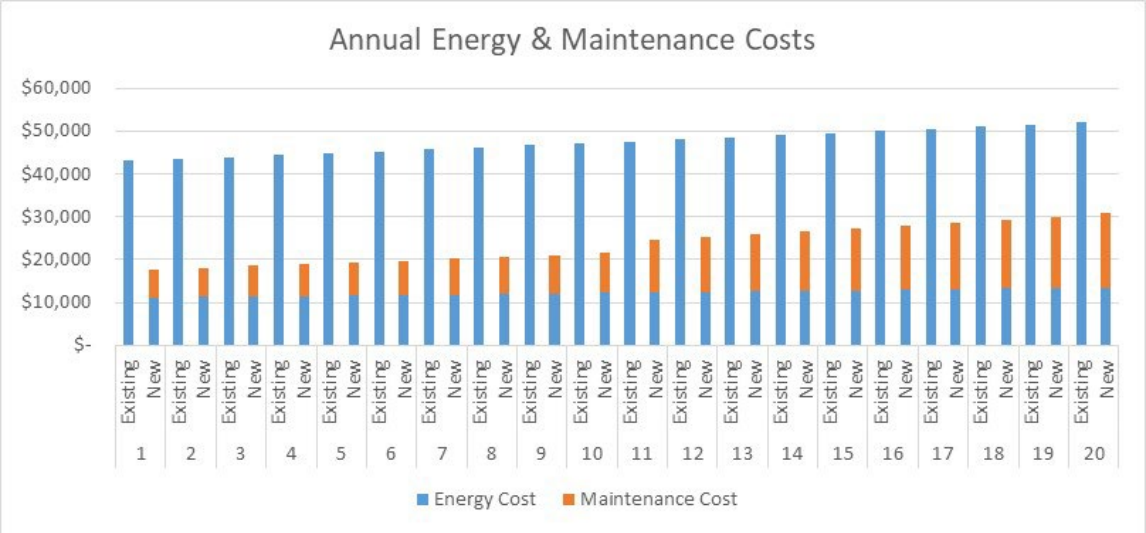
Chart 1 and Table 1 below compare the costs and benefits for Streetlight System Ownership Options 1 and 2. **The costs and savings listed below are associated with the annual energy and maintenance charges only, and do not include the upfront cost to purchase the system.** For detailed costs associated with the project (including acquisition cost, and projected return on investment), please refer to Appendix B: Financial Analysis & Assumptions.

Chart 2 and Table 2 below compare the costs and benefits of Options for Remedying Underlit Streetlight System Options 1 vs. 2. For detailed costs associated with the project (including acquisition cost, and projected return on investment), please refer to Appendix B: Financial Analysis & Assumptions.

Streetlight System Ownership Options

Option 1: Ownership Transfer from PG&E to City, LED Conversion, Ongoing Maintenance

Chart 1 – Option 1 Annual Energy and Maintenance Costs



Option 1: The Annual Energy & Maintenance Costs chart represents the energy and maintenance costs for the next 20 years for both the existing and converted streetlight system. Note that under the existing tariff rates, PG&E-owned (LS-1) streetlights include both energy and maintenance costs on the City's monthly utility bill.

Table 1 - Comparison of Costs and Savings for Option 1 & Option 2*

		Existing Energy and Maintenance Cost (Option 2**)	New Energy and Maintenance Cost	Savings	% Savings
Option 1	Annual Energy + Maintenance	$43,045	$17,748	$25,297	59%
	20-Year Energy + Maintenance	$947,803	$471,322	$476,481	50%***

*See Appendix B: Financial Analysis & Assumptions for detailed results.
**Option 2: No Action would involve the City making no change to its current streetlight system. Energy and maintenance costs under Option 2 would match existing energy and maintenance costs.
***Note that the percent savings differs between the annual and 20-year analyses. This is because maintenance costs increase over time as warranties for fixtures expire.

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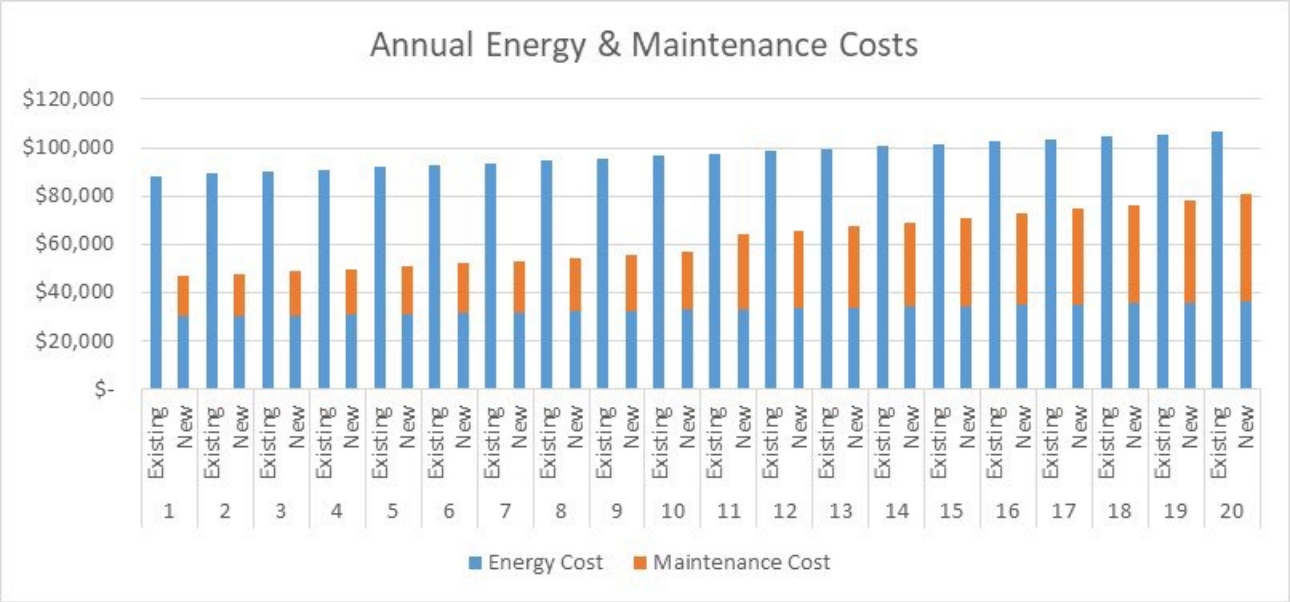
Options for Remedying Underlit Streetlight System

Options 1 and 2: PG&E-Sponsored Installation of Additional Cobra Head Fixtures (Option 1) vs. PG&E-Sponsored Installation of Additional Cobra Head Fixtures and City Streetlight Acquisition (Option 2)

Chart 2 – Options 1 vs 2 Annual Energy and Maintenance Costs



Options 1 and 2: The Annual Energy & Maintenance Costs chart represents the energy and maintenance costs for the next 20 years for both the PG&E-owned additional 700 streetlight fixtures vs. the City owning the additional 700 streetlight fixtures. Note that under the existing tariff rates, PG&E-owned (LS-1) streetlights include both energy and maintenance costs on the City's monthly utility bill.

Table 2 - Comparison of Costs and Savings for Option 1 & Option 2*

		Ownership Cost	Energy and Maintenance Cost	Savings	% Savings
Option 1	Annual Energy + Maintenance	N/A	$88,237	N/A	N/A
	20-Year Energy + Maintenance	N/A	$1,942,890	N/A	N/A
Option 2 (Compared to Option 1)	Annual Energy + Maintenance	$299,600	$46,791	$41,446	47%
	20-Year Energy + Maintenance	N/A	$1,235,294	$707,596	36%**

*See Appendix B: Financial Analysis & Assumptions for detailed results.
**Note that the percentage savings differs between the annual and 20-year analyses. This is because maintenance costs increase over time as warranties for fixtures expire.

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RECOMMENDATIONS & CONCLUSIONS

Tanko Lighting recommends that the City:

1. **Proceed with Streetlight System Ownership Option 1 (Ownership Transfer and Conversion)**: Proceed with exploring the concept of purchasing the streetlight system from PG&E and converting the remaining HPS fixtures to LED. This will allow the City to gain control over its streetlighting levels and maintenance of the system. This option also has the potential to save the City an estimated 59% on its annual energy and maintenance costs, or approximately $476,481 over the next 20 years. The main justifications for purchasing the utility-owned system are:

    1. Lower maintenance costs for the City. The City would have the option to provide or outsource ongoing maintenance for the system, thus removing the high maintenance fees included in PG&E's Company Owned streetlight tariff rates (LS-1 Rate).

    2. Improved response time for repairs. The most common complaint voiced to Tanko Lighting by municipalities with utility-owned systems is that maintenance service timelines are slow, and the infrastructure is not well maintained. While the utility will still play a role in the overall health of the system, the City will be able to dispatch its maintenance crews or contractor at the pace that it determines is appropriate to address the issues.

    3. Control of lighting levels and coverage throughout the City's roadways. The City can collaborate with its consultant to design a system or make updates that meets the community's needs.

    If the City decides to pursue the potential acquisition, negotiation would be the recommended initial approach. Tanko Lighting has gathered a significant amount of research, documentation, and streetlight specific knowledge that would be highly beneficial if the City decides to pursue negotiations. If the City decides to pursue acquisition and negotiations are stalled, in a worst-case option, the City could decide to take legal action against PG&E to transfer the ownership of the streetlight system on the basis of eminent domain. This has been done in many states. If this approach is chosen, Tanko Lighting can provide additional support (as we currently support other municipalities with similar projects in California and other states) – see Recommendation 4, below.

2. **Proceed with an Audit and Data Reconciliation**: Proceed with a comprehensive streetlight audit and utility inventory reconciliation. While the utility bills provided by the City were helpful in estimating the quantity of streetlights in the existing system, Tanko Lighting suggests that the City proceed with a comprehensive audit to collect more information. This will help evaluate the current condition of the system, especially regarding the standalone poles, as well as assist in defining the current value of the system. This will allow the City to review a more accurate financial analysis and determine the financing implications for the full project. It will also provide the City with an updated understanding of its streetlighting system. For an outline of the full project process, please see Appendix C: Ownership Transfer & Ongoing Maintenance Processes.

3. **Proceed with a Streetlight Deficiency Analysis**: The current lack of sufficient lighting in the City can have public safety consequences. While there are costs involved with both Options 1 and 2 for Remedying Underlit Streetlight System, investing in the City's lighting infrastructure will result in long-term improvements to the City's right-of-way. To explore these options further, we recommend a Streetlight Deficiency Analysis. This would identify gaps in the streetlighting system and provide a cost assessment for any recommended additional streetlighting. If this approach is chosen, Tanko Lighting can provide additional support – see Recommendation 4, below.

4. **Connect with Tanko Lighting on Next Steps**: Tanko Lighting is the most nationally experienced company with municipal streetlight projects. As such, our team is qualified to serve as a liaison between the City and PG&E to update inventory, initiate a dialogue for ownership transfer, and create a conversion plan. Additionally, we can assist with a streetlight deficiency analysis

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to determine how to remedy any underlit areas of the City. We recommend connecting with our team to review options and next steps.

To understand an overview of our recommended scope of work for the City's streetlight project, please see the workflow chart in Appendix A.

Appendices

- **Appendix A – Streetlight Project Overview**
- **Appendix B – Financial Analyses & Assumptions**
- **Appendix C – Ownership Transfer, & Ongoing Maintenance Processes**

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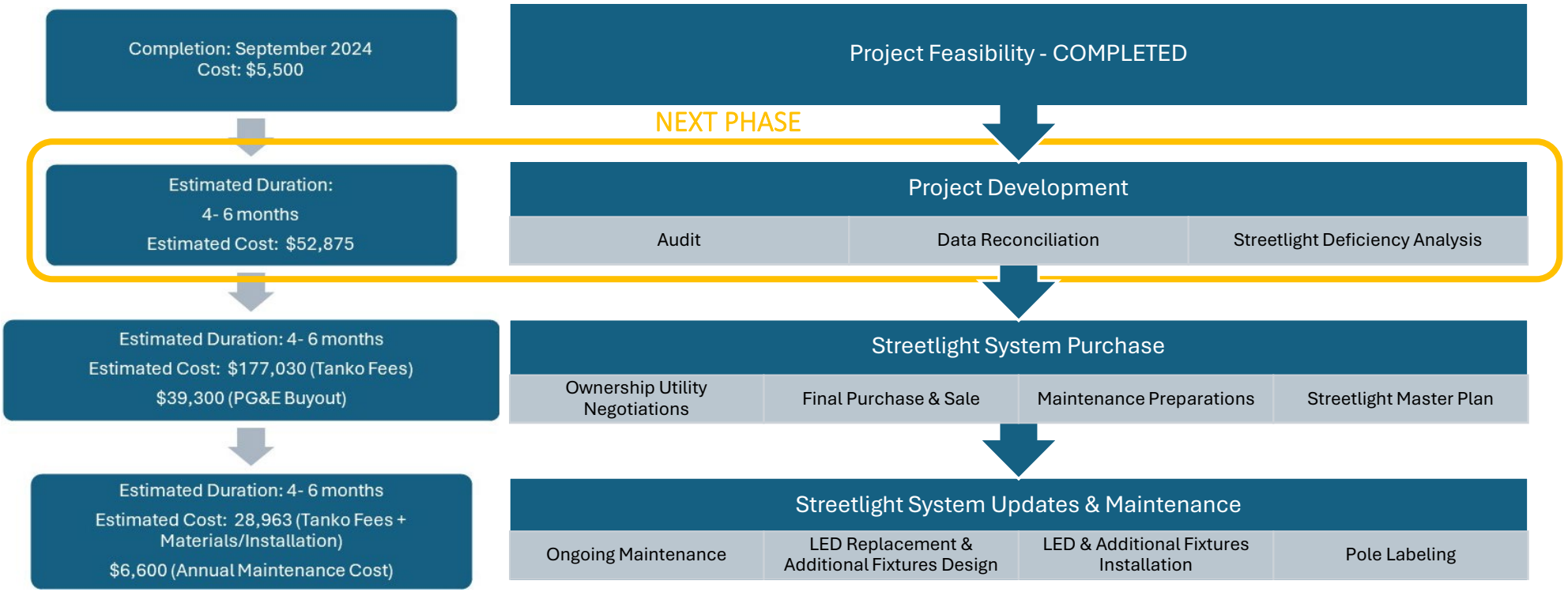
Appendix A – Streetlight Project Overview

City of Clearlake, CA



Upon project completion: $25,297 = Estimated Annual Savings; 8.49-year payback

Appendix B – Financial Analysis & Assumptions

Assumptions

The following assumptions were made to determine the results for this report:

- Materials
  - Reputable fixture manufacturers and recent fixture pricing
  - Photocells
- Labor
  - Per fixture installation rates from qualified electrical workers in the region (budgetary)
  - Labor costs included installation, photocell, and any required ancillary materials
- Utility
  - Existing rate:
    - PG&E's Streetlight Service Tariff effective September 1st, 2024:
      - PG&E-Owned Tariff Rate: LS-1
  - Municipal-owned rate:
    - PG&E's Streetlight Service Tariff effective September 1st, 2024:
      - Muni-Owned Tariff Rate: LS-2
  - Monthly rates:
    - The City's March and April 2024 PG&E streetlight bills and PG&E's Streetlight Tariff were utilized to determine monthly rates.
  - Purchase price (Streetlight System Ownership Option 1):
    - Estimated to be approximately $39,300 total, or approximately $150 per fixture.
  - PG&E-sponsored Installation of Additional Cobra Head Fixtures, No Acquisition (Option 1, Options for Remedying Underlit Streetlight System):
    - Assumed per unit price (based on PG&E's LS-1 Streetlight Service Tariff) of $0 per fixture upfront.
  - PG&E-sponsored Installation of Additional Cobra Head Fixtures, City Acquisition (Option 2, Options for Remedying Underlit Streetlight System):
    - Assumed per unit price (based on PG&E's LS-1 Streetlight Service Tariff) of $0 per fixture upfront.
- Quantities and Lamp Type
  - Quantity and existing lamp type derived from data provided by in the City's March and April 2024 PG&E streetlight bill.
  - 69 utility-owned (LS-1 Rate) streetlight fixtures and 13 City-owned (LS-2 Rate) streetlight fixtures
  - Existing lamp type (see table below)
- Preliminary watt-for-watt design replacement of existing fixtures
  - 20% ballast factor applied to HPS wattages (not shown in table)
  - These assumed replacement fixtures and wattages are based on what we have seen be most successful in our nationwide conversion experience, and manufacturer lumen standards for LED replacements.

Table 3 – Watt-for-Watt Design Replacement

Existing Fixture	Option 1: Assumed Tanko Replacement Fixture
70W HPS	25W LED Cobra Head
100W HPS	35W LED Cobra Head
150W HPS	45W LED Cobra Head
Existing LED	N/A

- Federal Inflation Rate: 4%

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- Energy Cost Inflation Rate: 1%
    - Note that 1% is a conservative estimate as this rate can reach about 3%
- Sales Tax Rate: 8.75%
- Budgetary Maintenance Program Costs
    - Option 1: $2.50/pole/month administrative fee for LED fixtures (post warranty period)
        - Time & Materials repair work (based on qualified electrical workers in the region)
        - Emergency costs assumed recuperated through insurance
        - Average call-out frequency, hourly pricing, and batched responses

Financial Analysis

Please see subsequent pages.

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Summary of Financial Analyses – Clearlake, CA

September 30, 2024

Streetlight System Ownership Options

Option Details	Option 1	Option 2
System Ownership	Acquired by Municipality	Utility-owned
LED Conversion	Converted by Municipality	N/A
Maintenance	Maintained by Municipality	Maintained by Utility
Project Overview		
Total Cost *(Ownership + Conversion)*	$282,293	$0
20 Year Savings	$476,481	$0
Payback Period *(Energy Savings Only)*	6.71 years	0
Payback Period *(Energy + Maintenance Savings)*	8.49 years	0
Assumptions & Notes		
Utility Asset Purchase or Buyout Cost *(estimated cost of utility streetlight purchase or HPS streetlight buyout)*	$39,300	$0
Tanko Fees		
Ownership Support Fees *(Audit, Utility Negotiation, Final Asset Transfer, etc.)*	$152,030	$0
LED Conversion Fees *(Material, Installation, Construction Management)*	$28,963	$0
Net Project Cost	$220,293	$0
Assumptions & Notes		
Quantity of Lights Included in Analysis	275	275
PG&E-Owned Streetlights Included in Analysis	262	262
City-Owned Streetlights Included in Analysis	13	13
Option 1: Purchase Cost per Light	$150	$0
Tariff Rate of Old System	LS-1 & LS-2	LS-1
Tariff Rate of New System	LS-2	LS-2
Federal Inflation Rate	4.00%	4.00%
Utility Cost Inflation Rate	1.00%	1.00%
Estimates are calculated using Net Future Values		

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Summary of Financial Analyses – Clearlake, CA

September 30, 2024

Streetlight System Ownership Options Details

Option Details	Option 1		
System Ownership	Acquired by Municipality		
LED Conversion	Converted by Municipality		
Maintenance	Maintained by Municipality		
Year 1 Analysis	**Existing**	**New**	**Savings**
Energy Usage [kWh]	58,741	34,174	24,567
Utility Bill Cost	$485,613	$117,311	$368,302
Maintenance Cost	Included in current Utility Bill Costs	$100,968	-$100,968
Total	$485,613	$218,279	**$267,334**
20 Year Analysis	**Existing**	**New**	**Savings**
Energy Usage [kWh]	34,141,464	11,212,320	22,929,144
Utility Bill Cost	$10,692,716	$2,583,079	$8,109,637
Maintenance Cost	Included in current Utility Bill Costs	$3,519,319	-$3,519,319
Total	$10,692,716	$6,102,398	**$4,590,318**

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Summary of Financial Analyses – Clearlake, CA

September 30, 2024

Remedying Underlit Streetlight System Options

Option Details	Option 1	Option 2
System Ownership	Utility-owned	Acquired by Municipality
LED Conversion	Installed by Utility	Installed by Utility
Maintenance	Maintained by Utility	Maintained by Municipality
Project Overview		
Total Cost *(Ownership + Conversion)*	N/A	$299,600
20 Year Savings *(Energy + Maintenance Savings)*	N/A	$707,596
Payback Period *(Energy Savings Only)*	N/A	5.04 years
Payback Period *(Energy + Maintenance Savings)*	N/A	7.19 years
Assumptions & Notes		
Utility Asset Purchase or Buyout Cost *(estimated cost of utility streetlight purchase or HPS streetlight buyout)*	N/A	$299,600
Tanko Fees		
Ownership Support Fees *(Audit, Utility Negotiation, Final Asset Transfer, etc.)*	TBD	TBD
LED Conversion Fees *(Material, Installation, Construction Management)*	$0	N/A
Net Project Cost	N/A	$299,600
Assumptions & Notes		
Quantity of Lights Included in Analysis	700	700
Purchase Cost per Light	N/A	$428
Tariff Rate of New System	LS-1, LED	LS-2, LED
Federal Inflation Rate	4.00%	4.00%
Utility Cost Inflation Rate	1.00%	1.00%
Estimates are calculated using Net Future Values		

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Summary of Financial Analyses – Clearlake, CA
September 30, 2024

Remedying Underlit Streetlight System Options

Comparison of Options			
Year 1 Analysis	**Option 1**	**Option 2**	**Savings**
Energy Usage [kWh]	91,840	91,840	0
Utility Bill Cost	$88,237	$29,991	$58,246
Maintenance Cost	Included in Utility Bill Costs	$16,800	-$16,800
Total	$88,237	$46,791	**$41,446**
20 Year Analysis	**Option 1**	**Option 2**	**Savings**
Energy Usage [kWh]	1,836,800	1,836,800	0
Utility Bill Cost	$1,942,890	$660,380	$1,282,510
Maintenance Cost	Included in Utility Bill Costs	$574,914	-$574,914
Total	$1,942,890	$1,235,294	**$707,596**

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Appendix C – Ownership Transfer, and Maintenance Processes

The outline below explains Tanko Lighting's process for the potential streetlight ownership transfer, and ongoing maintenance. This is intended to provide the City with more information should it choose to proceed with the ownership transfer of its streetlights. This outline shows an approximate 12-month project. Often, the longest delays come from utility processes, including ownership transfer paperwork and discrepancy reviewing. Please note that while some project processes can overlap with utility timelines, others are dependent on utility or City actions before proceeding. Tanko Lighting will coordinate with the City, utility, and other project partners to ensure that the project is completed in a prompt and reasonable timeframe.

1. Audit & Data Reconciliation -
    a. Perform a comprehensive streetlight audit ~ 5-6 weeks
        i. Tanko Lighting performs an in-field audit in which an auditor visits and collects approximately 30 attributes at each streetlight fixture. These data points will be reviewed by our in-house data analysts for quality control and will help to evaluate the Net Book Value of the system and the condition of the system, especially in regard to the standalone poles that would be purchased in the ownership transfer phase.
    b. Reconcile the in-field conditions with the utility inventory: ~ 6-8 weeks
        i. The project data analyst will compare the data collected during the audit to PG&E's billing inventory for the City and produce a concise report highlighting all discrepancies.

2. Ownership Transfer – Timeline is utility-dependent
    a. Provide ownership transfer assistance:
        i. Tanko Lighting will work with PG&E to help guide the City through the ownership transfer process. We suggest that municipalities buy the system as-is and then work with the utility to reconcile the inventory in a second or "true-up" phase. This ensures that the City starts to realize savings immediately and is not delayed by a minority of discrepancies.
    b. Validate and reconcile the inventory:
        i. Using the audit and data reconciliation report, Tanko Lighting will work with the City to update the inventory and confirm all eligible lights have transferred ownership.

3. Design & Procurement – Design: ~ 6-8 weeks; Materials lead time: 6-8 weeks
    a. Design a custom streetlighting system:
        i. Tanko Lighting uses industry-accepted standards, as well as the data collected during the audit, as guidelines, while working closely with the v to develop a customized proposed streetlight design that matches its needs.
    b. Guide the City with fixture selection:
        i. Tanko Lighting will work with the City to educate all stakeholders on the available fixture models, the important features to consider, and how best to meet the City's needs.
    c. Manage procurement and logistics:
        i. Tanko Lighting will work with the v to order and to coordinate delivery for all materials.

4. Installation ~ 10 - 12 weeks
    a. Manage the installation:
        i. Tanko Lighting will work with the v to determine the best procurement options for the installer. The project manager will manage all aspects of the installation and meet all City requirements.
        ii. Tanko Lighting provides data collection devices to the installers and creates custom installation maps (paper and digital) for clean, easy installation.
        iii. Installation rates vary by project, but the City should expect about 20-30 installations per crew per day. The installer checks the voltage, troubleshoots the fixture to confirm that it is functioning properly, and reports any in-field issues when discovered.
        iv. Tanko Lighting will review all data provided by the installer for any discrepancies.

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5. Final Reporting ~ 3-5 weeks
    a. Submit the utility rate change:
        i. Tanko Lighting will produce and submit all required documentation for PG&E's rate change processes.
    b. Provide the final streetlight data
        i. Tanko Lighting will provide a final project deliverable to assist the City with managing the new streetlight system. This will be a final report summarizing the project with updated financial models.
6. Ongoing Maintenance
    a. Assist the City with choosing a maintenance program:
        i. There are multiple options that the City can choose for ongoing maintenance.
            1. City Maintenance:
                a. With this option, the City would utilize its internal staff to maintain the streetlight system. Maintenance services provided by City employees could potentially include re-lamping, preventative maintenance, emergency services (knockdown streetlight poles), day-to-day maintenance (including day burners), utility engagement, locates, etc.
            2. Outsourced Maintenance:
                a. With this option, the City would outsource the streetlight maintenance services to a qualified contractor. The contractor would be responsible for both routine and emergency maintenance needs, in addition to having contractually obligated and guaranteed response times. Typically, an outsourced maintenance contract involves a scope of work that includes administrative support (outage, dispatch, and tracking/reporting), as well as routine and emergency services:
                    i. Unit Price + Hourly Rates: A fixed unit price based on a dollar amount per streetlight per month that includes routine maintenance services and administration, along with hourly rates for emergency services billed on a time and materials basis; or
                    ii. Hourly Rates: Hourly rates for administrative support, as well as both routine and emergency services billed on a time and materials basis.
        ii. Tanko Lighting will help the City to understand the process and requirements, as well as assist with procuring a maintenance contractor. Recommended maintenance programs typically include:
            1. A monthly per-pole administrative fee (usually $1-2 per pole per month). This monthly fee provides:
                a. An online work request management system
                b. Administrative support to City staff
                c. The establishment and management of a streetlight outage call center
                d. The intake and processing of outage reports, warranty related repairs, and utility repair requests
                e. Time-sensitive dispatch of the subcontractor
            2. Time and materials invoicing for maintenance work for all streetlight maintenance-related labor performed in the field. Tanko Lighting recommends compiling non-urgent reports until there are enough to batch together for a full or half day of work, to minimize additional travel surcharges and maximize value if time and materials-related work is billed at an hourly minimum.
            3. Emergency services, which encompass all pole knockdowns and other streetlight-related public safety hazards on City-owned poles. A 24-hour call center or contact number (and usually a 2–6-hour response time) are guaranteed, depending on the City's requirements.
            4. Administrative support for reports on streetlights not owned by the City. If maintenance is required, Tanko will provide the City with all relevant information about the report in order for the City to coordinate directly with the utility and/or appropriate entity for repair.
        iii. An example of a non-emergency call would be as follows:
            1. A resident reports an outage through the call center or online form.

2. The maintenance project manager confirms the location and all relevant information in the streetlight data and adds it to the pending maintenance list.
3. The maintenance project manager provides the list to the City for approval and dispatches the contractor to address the issues.

iv. An example of an emergency call would be as follows:

1. A pole is knocked down after hours, around 10pm.
2. Either the City, first responders, or a bystander will call the call center number and report the emergency.
3. The call center will dispatch the contractor directly and the contractor will arrive at the site within the contracted response time.

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