

NIPOMO COMMUNITY SERVICES DISTRICT

September 9, 2021

2:00 P.M.

SPECIAL MEETING NOTICE & AGENDA FINANCE AND AUDIT COMMITTEE

COMMITTEE MEMBERS

DAN GADDIS, CHAIRMAN
ED EBY, MEMBER

PRINCIPAL STAFF

MARIO IGLESIAS, GENERAL MANAGER
LISA BOGNUDA, FINANCE DIRECTOR
PETER SEVCIK, DIRECTOR OF ENG AND OPS
CRAIG STEELE, GENERAL COUNSEL

**MEETING LOCATION – Jon S. Seitz Board Room
148 S. Wilson Street, Nipomo, California**

- 1. CALL TO ORDER, FLAG SALUTE AND ROLL CALL**
- 2. REVIEW DRAFT BLACKLAKE VILLAGE STREET LIGHTING DISTRICT RATE STUDY & TECHNICAL MEMORANDUM FOR CONVERTING TO LED TYPE STREET LIGHTING**

ACTION RECOMMENDED: Receive Reports and provide direction to Staff.

- 3. ADJOURN**

TO: FINANCE AND AUDIT COMMITTEE

FROM: MARIO IGLESIAS
GENERAL MANAGER

DATE: SEPTEMBER 8, 2021

AGENDA ITEM
2
SEPTEMBER 9, 2021

**REVIEW PRESENTATION FROM BLACKLAKE VILLAGE
STREET LIGHTING DISTRICT RATE CONSULTANT**

ITEM

Review Lechowicz and Tseng Municipal Consultants Blacklake Village Street Lighting Assessment District Draft Rate Study (Rate Study) presentation and direct staff [RECOMMEND REVIEW, DISCUSS, AND DIRECT STAFF]

DISCUSSION

At your June 23, 2021 Board Meeting, staff requested and your Board approved an agreement with Lechowicz and Tseng Municipal Consultants (“Consultant”) for a rate study of the Blacklake Village Street Lighting Assessment District (“Lighting District”) [Attachment A]. Your Board took this action after receiving staff’s report on the enterprise’s financial condition and hearing from the public, saw fit to address the growing funding gap between expenses and revenues. Additionally, the Consultant was to provide the Board with a review and analysis for converting the High Pressure Sodium Vapor (“HPSV”) lamps currently used in the Lighting District with Light Emitting Diode (“LED”) lamps as a cost saving measure.

The Consultant has completed a draft outline of each requested report. The proposed rate supported in the Rate Study increases the annual assessment of each parcel by \$35 per year from \$50 per year to \$85 per year – a cost that equates to an increase of \$2.92 per month per parcel.

The Nipomo Community Services District (“NCSD”) began servicing the Lighting District in 1992. During that time period, NCSD has adjusted rates to meet the financial obligations of the enterprise. As demonstrated below, the majority of the 30 years of operations, the cost of service was met with an annual assessment of \$34/Year (1996 through 2013). Since that time, power costs and the level of NCSD required maintenance has increased leading to the current imbalance between revenues and expenses. Calculating the cost of lighting had a 2.5% CPI been applied annually, the current \$52/Year would have been \$102/year.

Table 1: History of Assessments

2021 Street Light Rate Study Blacklake Village Street Lighting Assessment District

Fiscal Years		Charge/Parcel	County Charge	Total
1992-93	1 year	\$48.00	\$2.00	\$50.00
1993-94	1 year	\$50.00	\$2.00	\$52.00
1994-95	1 year	\$48.00	\$2.00	\$50.00
1995-96	1 year	\$40.00	\$2.00	\$42.00
1996-97 through 2012-13	17 years	\$34.00	\$2.00	\$36.00
2013-2014 through 2017-18	5 years	\$44.00	\$2.00	\$46.00
2018-2019 through 2021-22	4 years	\$50.00	\$2.00	\$52.00
2022-2023 Proposed		\$85.00	\$2.00	\$87.00

Failure to adjust the rate of assessment would lead to cost saving measures to reduce expenditures so as not to exceed annual assessments collected by NCSD. Cost saving measures could include turning off a number of street lights as the cost of power is the predominant expenditure of the enterprise.

In addition to the Rate Study, the Consultant reviewed and analyzed a plan to convert HPSV lamps to LED lamps. The analysis and recommendations by the Consultant is included as Attachment A of the Rate Study [Attachment B]. The Consultant's recommendations provide a view into possible cost savings for the enterprise.

FISCAL IMPACT

The fiscal impact to the Blacklake Village Street Lighting Enterprise with the additional revenue generated by the proposed adjustment, will provide a sustainable and adequately funded enterprise that will serve the community's street lighting needs into the future. Failure to adjust the current assessment to the recommended levels will have an impact on NCSD's ability to meet the community's service expectations by reducing the number of functioning street lights and deferring long overdue maintenance to the 190 lights and poles.

STRATEGIC PLAN

Goal 4. FINANCE. Maintain conservative, long-term financial management to minimize rate impacts on customers while meeting program financial needs.

RECOMMENDATION

It is recommended that the Committee receive the Consultant's analysis, review information provided in this staff report, take public comment, discuss and provide direction to staff.

ATTACHMENTS

- A. September 3, 2021 Draft Report, Rate Study for the Blacklake Village Street Light Assessment District
- B. September 3, 2021, Draft Attachment A, Technical Memorandum, Rate Study for the Blacklake Village Street Light Assessment District – LED Conversion Analysis

SEPTEMBER 9, 2021

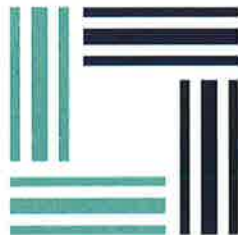
ITEM 2

ATTACHMENT A



**Rate Study
for the
Blacklake Village
Street Lighting Assessment District**

**DRAFT REPORT
September 3, 2021**



LECHOWICZ + TSENG
MUNICIPAL CONSULTANTS

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TABLE OF CONTENTS

INTRODUCTION.....	1
Background	1
Effects of Proposition 218.....	1
Street Light Inventory	2
COST OF SERVICE	4
Revenues.....	4
Operating Expenses	4
Capital Expenses	5
CASH FLOW AND PROPOSED ASSESSMENT.....	6
Cash Flow and Reserves.....	6
Proposed Assessment	9

LIST OF TABLES

Table 1: History of Assessments	1
Table 2: Blacklake Village Street Light Inventory.....	3
Table 3: Estimated Street Light PG&E Bills	5
Table 4: Cash Flow	7
Table 5: Assessment Calculation.....	9

INTRODUCTION

Background

The Blacklake Village Street Lighting Assessment District is made up of 190 high pressure sodium vapor (HPSV) street lights that provide lighting service to 557 parcels. The intent of this report is to evaluate the operating and capital costs of the district and recommend street light assessments to fund these costs. Nipomo Community Services District (NCSD) has provided street lighting services to Blacklake Village from the time NCSD took over a developer-petitioned assessment district formed by the County. In order to maintain the street lighting system, an annual assessment is levied on each parcel for the service rendered. The current approved maximum annual assessment is \$50.00¹ per parcel.

The table below shows the history of per parcel annual assessment and the proposed Fiscal Year (FY) 2022-2023 assessment:

**Table 1: History of Assessments
2021 Street Light Rate Study
Blacklake Village Street Lighting Assessment District**

Fiscal Years		Charge per Parcel	County Fee	Total
1992-93	1 year	\$48.00	\$2.00	\$50.00
1993-94	1 year	\$50.00	\$2.00	\$52.00
1994-95	1 year	\$48.00	\$2.00	\$50.00
1995-96	1 year	\$40.00	\$2.00	\$42.00
1996-97 through 2012-13	17 years	\$34.00	\$2.00	\$36.00
2013-2014 through 2017-18	5 years	\$44.00	\$2.00	\$46.00
2018-2019 through 2021-22	4 years	\$50.00	\$2.00	\$52.00
2022-2023 PROPOSED		\$85.00	\$2.00	\$87.00

Currently, the district is operating at a deficit and an assessment increase is needed to meet costs, fund capital needs, and accumulate appropriate reserves. The proposed annual assessment for the 2022-2023 fiscal year is \$85.00.¹ Note that San Luis Obispo County adds \$2.00 per parcel handling fee for processing the property tax collection, making the total proposed annual assessment billed to each parcel owner \$87.00.

Effects of Proposition 218

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIIC and XIID of the California Constitution. Proposition 218 establishes requirements for imposing any new or increasing any existing property-related fees and charges. The Blacklake Village Street Lighting Assessment District is exempt from the procedural requirements of Article XIID of the California Constitution by virtue of Government Code Section 53753.5(b)(1) which

¹ Not including County administrative fee.

exempts assessments for the maintenance expenses of streets. Maintenance expenses are defined to include the cost of electrical current. In as much as lights are an integral part of the street, the cost of maintenance of the lights is exempt.

The Assessment District is also exempt by virtue of Government Code Section 53753.5(b)(2) which exempts assessments imposed pursuant to a petition signed by the persons owning all of the parcels subject to the assessment at the time the assessment is initially imposed. Any subsequent assessment methodology change to increase the assessment, or increase to the assessment beyond the adopted assessment formula or range of assessments, shall be subject to the procedures and approval process set forth in Section 4 of Article XIID of the California Constitution.

Street Light Inventory

The Blacklake Village Street Lighting Assessment District is comprised of 190 HSPV street lamps. 30 lamps are owned, operated, and maintained by Blacklake Village and billed for electric service by Pacific Gas and Electric (PG&E) via the LS-2 tariff. 160 lamps are served under the LS-1 tariff. For these lamps, some or all of the street light facilities are owned by PG&E. Blacklake Village pays PG&E for electric service as well as rental and maintenance of the LS-1 lamps.² The LS-1 tariff is further subdivided into LS-1A through LS-1F based on pole type and configuration. The tariff applicable to each lamp determines Blacklake Village's energy cost and facility rental fees. A list of street light terms and definitions is provided below as well as an inventory of Blacklake Village's lamps.

Street Light Terms

Photo controller: daylight sensor that turns street lights on and off at dusk and dawn

Luminaire: bulb, lighting fixture, and photo controller

Mast arm: bracket or support arm that attaches the luminaire to the pole

Pole: support for the mast arm and luminaire

Post: support for street lights served on tariff LS-1D and Blacklake Village's LS-2A street lights³; the luminaire is a post top fixture that is not attached to a mast arm

Shared distribution pole: a pole that supports a street light mast arm as well as other PG&E electric distribution system wiring or other non-street light equipment; LS-1A mast arms are supported by shared distribution poles

Street light only pole: a pole that is only used for street lighting service and does not support other electrical equipment

Street light: total street light facility potentially including a pole or post, mast arm, and luminaire

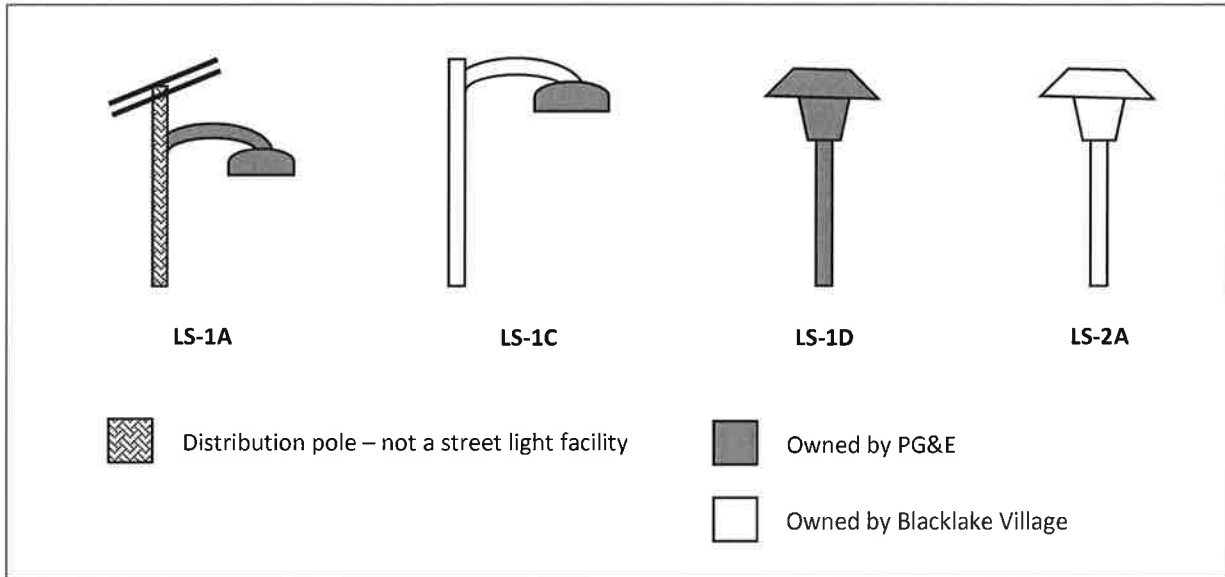
² PG&E's maintenance responsibility varies by LS-1 street light tariff.

³ LS-2As can be supported by a variety of pole or post types. Blacklake Village's LS-2As are post top lamps

**Table 2: Blacklake Village Street Light Inventory
2021 Street Light Rate Study
Blacklake Village Street Lighting Assessment District**

Tariff	Blacklake Village Ownership	PG&E Ownership	Lamp Type	Count
LS-1A	None	Mast arm and luminaire attached to a shared distribution pole	HPSV 120 Volt 100 Watts	1
LS-1C	Mast arm and pole or post	Luminaire	HPSV 120 Volt 70 Watts	83
			HPSV 240 Volt 200 Watts	1
LS-1D	None	Street light only pole, post top lamp	HPSV 120 Volt 70 Watts	70
			HPSV 120 Volt 100 Watts	5
LS-2A	Post and luminaire	None	HPSV 120 Volt 70 Watts	30
Total				190

Figure 1: Ownership of Blacklake Village Street Light Facilities by Tariff



COST OF SERVICE

This section describes the operating and capital cost of service associated with providing street lights to the Blacklake Village residents and businesses. No new lamps are proposed to be constructed in this report.

Revenues

The district's only source of revenue is assessments paid by property owners within Blacklake Village. In the past, the district has generated small amounts of interest earnings from reserves. However, due to recent operating deficits, it is anticipated that interest earnings will be de minimis. Current revenues are \$27,850 and are stable due to Blacklake Village's participation in the Teeter Plan. Assessments are not sufficient to fund operating costs. Furthermore, Blacklake Village has not historically planned for or budgeted for capital improvements. It is proposed that Blacklake Village adjust its accounting practices such that assessment revenues be set aside to fund capital expenses separate from operating expenses. It is recommended that the current assessment revenues increase from \$27,850 to \$47,345. Of the total assessment revenues, it is recommended that \$37,145 be allocated to operations and \$10,200 be allocated to capital.

Operating Expenses

NCSO evaluated its overhead costs and adjusted its estimates for Blacklake Village's expenses related to insurance, public noticing, and administration. In the current year (FY2021-2022), Blacklake Village will incur additional expenses related to preparing this rate study, mailing notices to property owners, and conducting a Proposition 218 balloting process. These costs are one-time expenses and are not carried over into FY2022-2023 (the year of the proposed assessment increase).

Monthly street light bills paid to PG&E are estimated in Table 3 at about \$28,900 in FY2022-2023. The total cost reflects known and assumed adjustments to PG&E's electric rate and street light rental fees. It should be noted that PG&E has transitioned Blacklake Village's 30 LS-2C street lights to the LS-2A tariff. The LS-2C tariff is higher cost as PG&E provides maintenance of the lamps. Under the LS-2A tariff, Blacklake Village is responsible for maintenance. Due to the transition, Blacklake Village's LS-2 fees paid to PG&E are reduced.

LS-2 maintenance costs must now be paid to a contractor who will service the lamps independent of PG&E. The primary maintenance cost for Blacklake Village's lamps is the replacement of burnouts. A typical HPSV lamp lasts for 72 months before burning out. Nipomo CSD staff estimate the cost to replace a burned-out lamp at about \$200 per lamp. This cost amortized over 72 months is \$2.78 per lamp per month. For all 30 LS-2A lamps, the total annual maintenance cost is estimated at \$1,000.80.

To fund cash flow insufficiencies due to the delay in the collection of property tax revenues, it is anticipated that Blacklake Village will borrow short-term funds from Nipomo CSD. This loan is expected to be repaid with a small amount of interest.

Table 3: Estimated Street Light PG&E Bills
2021 Street Light Rate Study
Blacklake Village Street Lighting Assessment District

Tariff	Lamp Type	kWh per month	Estimated PG&E Bills FY2022-2023			# of Lamps	Total Annual PG&E Cost
			Facilities Charges [1]	Energy Charges [2]	Total Estimated Monthly Bill		
LS-1A	HPSV 120-V 100 W	41	\$7.14	\$8.19	\$15.33	1	\$183.96
LS-1C	HPSV 120-V 70 W	29	\$6.64	\$5.80	\$12.44	83	\$12,390.24
LS-1C	HPSV 240-V 200 W	81	\$6.64	\$16.19	\$22.83	1	\$273.96
LS-1D	HPSV 120-V 70 W	29	\$9.44	\$5.80	\$15.24	70	\$12,801.60
LS-1D	HPSV 120-V 100 W	41	\$9.44	\$8.19	\$17.63	5	\$1,057.80
LS-2A	HPSV 120-V 70 W	29	\$0.20	\$5.80	\$6.00	<u>30</u>	<u>\$2,160.00</u>
						190	\$28,867.56

1 - Based on facilities charges agreed to in the Street Light Settlement Agreement in PG&E's 2020 General Rate Case Phase 2. The California Public Utilities Commission has not issued a final decision in the rate case but typically adopts non-contested settlement agreements without modification

2 - Estimated at \$0.19985/kWh based on the August 1, 2021 rate increased by 3%

Capital Expenses

As mentioned, Blacklake Village has not historically budgeted for capital replacements or reserves. It is recommended that assessments be adjusted to recover the cost of painting street light poles⁴ and to plan for the eventual conversion of LS-2 street lights to light emitting diode (LED) (see Blacklake Village Street Light LED Conversion Analysis dated September 3, 2021).

Nipomo CSD received a contractor quote at prevailing wage to paint the street light poles at \$280 per lamp. This cost is escalated by 3% annually to 2023. This report assumes Blacklake Village will paint approximately 27 lamps per year on an ongoing basis. The count of 27 lamps reflects one seventh of the inventory reflecting a typical seven year lifespan of paint.

It is also recommended that Blacklake Village plan for the eventual conversion of its 30 LS-2 lamps to LED.⁵ Based on potential high-end cost estimates to convert the LS-2A lamps to LED, Blacklake Village may need to cash fund a portion of the conversion (the other portion of conversion costs may be eligible for low or no cost financing). For planning purposes, the cash-funded portion is estimated at \$350 per lamp and is proposed to be accumulated over five years from street light assessments. The total annual set-aside is \$2,100.

⁴ It is assumed that the district (and not PG&E) is responsible for pole painting

⁵ PG&E offers a no cost conversion program for LS-1A and LS-1C lamps so no funding from Blacklake is needed to convert those street lights. Conversion of LS-1D lamps is uneconomical and not recommended.

CASH FLOW AND PROPOSED ASSESSMENT

Cash Flow and Reserves

The proposed Blacklake Village Street Light District cash flow is presented in Table 4. It is proposed that operating assessment revenues be increased from \$27,850 to \$37,145 to cover operating costs. This revenue increase is estimated to provide about \$5,500 in net revenues in FY2022-2023. This amount will be added to the district's operating reserves. It is recommended that Blacklake Village target an operating reserve of \$16,000 representing about six months of operating costs.

This rate study proposes a capital budget of \$10,200 in FY2022-2023 to fund pole painting and set aside funds for the eventual conversion of LS-2 lamps to LED. It is expected that pole painting funds will be spent annually while LED conversion funds will remain in district reserves until the project is conducted. The maximum reserve balance is proposed to be \$25,000 reflecting a high potential LED conversion cost of \$700 per lamp for 30 lamps plus annual inflation. Should either the operating or capital reserves exceed their targets, Blacklake Village could forgo future assessment increases and use excess reserves for the benefit of the property owners.

Table 4: Cash Flow
2021 Street Light Rate Study
Blacklake Village Street Lighting Assessment District

	<u>Est. Actual</u> 2020-2021	<u>Budget</u> 2021-2022	<u>Proposed</u> 2022-2023
ASSESSMENT REVENUES			
Operating street lighting assessment	\$27,850	\$27,850	\$37,145
Capital street lighting assessment			<u>\$10,200</u>
Total street lighting assessment proceeds			\$47,345
OPERATIONS			
REVENUES - Operating assessment			\$37,145
EXPENDITURES			
Insurance	500	100	110
Public & Legal Notice	115	500	120
Administration [1]	500	500	1,500
Street Light Rate Study	0	7,660	0
PG&E Street Light Fees [2]	29,200	28,000	28,900
Estimated Maintenance Cost for LS-2A Lamps [3]			1,000
Repayment of Interest on Past Deficit [4]	0	0	50
Total expenditures	<u>-30,315</u>	<u>-36,760</u>	<u>-31,680</u>
Net Operating Surplus (Deficit)	-2,465	-8,910	5,465
Plus Interest earnings	<u>50</u>	0	0
Net surplus (deficit) from operations	<u>-2,415</u>	<u>-8,910</u>	<u>5,465</u>
<i>Reasonable reserve</i>			
Estimated cash balance 7/1	\$14,430	\$12,015	\$3,105
Net surplus (deficit) from operations	<u>-2,415</u>	<u>-8,910</u>	<u>5,465</u>
Estimated cash balance 6/30	<u>\$12,015</u>	<u>\$3,105</u>	<u>\$8,570</u>
Operations Cash Reserve Goal [5]			<u>\$16,000</u>
FUNDED STREET LIGHT REPLACEMENTS (CAPITAL) EXPENDITURES			
REVENUES - Capital assessment			\$10,200
EXPENDITURES			
Pole Painting [6]			8,100
Conversion of LS-2A lamps to LED [7]			<u>2,100</u>
Total capital expenditures [8]			\$10,200

CASH FLOW NOTES

1 - Accounting, public hearing prep, tax roll preparation, reporting maintenance issues to PG&E, preparation of engineer's report

2 - FY2021-2022 budget street light fees reflect August 1, 2021 rates and the transition of LS-2C lamps (PG&E maintained) to LS-2A (no PG&E maintenance).

3 - Based on a contractor estimate of \$200 per lamp burnout. Amortized over 72 months, this cost is about \$2.78 per each LS-2 lamp

4 - In FY 2022-2023, Blacklake Village is projected to face cash flow constraints due to the timing of tax roll revenue disbursements. Average monthly operations and maintenance costs are approximately \$2,700 which will draw down the FY 2021-2022 estimated fund balance of \$3,100 in less than two months. It is assumed that the Blacklake Village will receive a short-term loan from NCSD and repay the loan once assessments are received from the County. It is assumed that Blacklake Village will repay the loan with interest based on the Local Agency Investment Fund interest rate (assumed to be 0.33% quarterly based on the June 2021 rate).

5 - Section 22569 of the 1972 Landscape and Lighting Act specifies that the reserve fund should not exceed the cost to operate the District from July through December while waiting for the County property tax revenue distributions. For Blacklake Village, this amount is approximately \$16,000.

6 - Based on contractor quote (prevailing wage) of \$280 per lamp escalated by 3% annually to 2023. Assumes Blacklake Village will paint approximately 27 lamps per year (i.e. one seventh of its inventory reflecting a typical seven year lifespan of paint)

7 - Based on potential high-end cost estimates to convert 30 LS-2A lamps to LED, Blacklake Village may need to cash fund a portion of the conversion (the other portion of conversion costs may be eligible for low or no cost financing - see Blacklake Village Street Light LED Conversion Analysis). For planning purposes, the cash-funded portion is estimated at \$350 per lamp and is proposed to be accumulated over five years from street light assessments.

8 - Any unspent capital assessments will be added to the street light funded replacement reserve on an annual basis. The maximum reserve balance is \$25,000 reflecting a high potential total LED conversion cost of \$700 per lamp for 30 LS-2A lamps plus annual inflation.

Proposed Assessment

Table 5 provides the current and proposed assessment developed in this report. It is proposed the assessment per parcel be increased from \$50 to \$85 annually plus the \$2 county charge. In addition, it is recommended that Blacklake Village adopt an annual inflationary increase to the assessment to keep up with rising expenses. The inflationary increase should be tied to the Consumer Price Index or other index used by Blacklake Village or Nipomo CSD. The district can implement inflationary increases annually without conducting another Proposition 218 balloting process.

Table 5: Assessment Calculation
2021 Street Light Rate Study
Blacklake Village Street Lighting Assessment District

	FY2022-2023	
	Current	Proposed
Operating street lighting assessment	\$27,850	\$37,145
Capital street lighting assessment	<u>\$0</u>	<u>\$10,200</u>
Total street lighting assessment proceeds	\$27,850	\$47,345
Number of parcels	557	557
Assessment per parcel	\$50.00	\$85.00
County charge	<u>\$2.00</u>	<u>\$2.00</u>
Total assessment per parcel	\$52.00	\$87.00

SEPTEMBER 9, 2021

ITEM 2

ATTACHMENT B



TO: Blacklake Village Street Light District
FROM: Lechowicz & Tseng Municipal Consultants
DATE: September 3, 2021
SUBJECT: Blacklake Village Street Light LED Conversion Analysis

DRAFT – Attachment A
TECHNICAL MEMORANDUM

Executive Summary

This memorandum provides an analysis of Blacklake Village’s 190 street lights and the opportunity to convert the lamps to light emitting diode (LED). Currently, Blacklake Village’s street lights are high pressure sodium vapor (HPSV) which is considered an outdated technology. LEDs last three times longer than HPSVs, produce higher quality lighting, and use approximately 1/2 to 2/3rds less energy than HPSVs.

Pacific Gas & Electric (PG&E) offers several LED conversion options based on the electric rate tariff of the lamps. It is recommended that Blacklake Village participate in PG&E’s LS-1 LED Program to convert 85 of its LS-1 lamps owned by PG&E (specifically lamps served on the LS-1A and LS-1C tariffs). Via this program, PG&E will convert LS-1 lamps with no upfront or ongoing costs to the customer. Following conversion, customers gain the benefit of lower energy use and accompanying bill savings. By converting LS-1A and LS-1C lamps, Blacklake Village would save about \$3,900 annually based on August 1, 2021 electric rates.

It is not recommended that Blacklake Village convert its 75 LS-1D lamps. Unlike LS-1A and LS-1C lamps, participating LS-1D lamps *are* charged additional ongoing fees following conversion that negate any bill savings from lowered energy use.

Blacklake Village also owns and operates 30 LS-2A lamps. Further analysis should be conducted regarding the conversion of these lamps to LED. Blacklake Village could bid out the conversion to a private contractor and manage the process itself or have PG&E convert the lamps under the LED Turnkey Replacement Program. Regarding the cost of conversion, reserves are not currently available for funding, so financing is needed. Blacklake Village should contact PG&E and independent contractors to determine the cost of conversion and financing options available.

Blacklake Village’s LS-2A lamps are likely decorative post top lamps that are higher cost to convert than non-decorative lamps. A high-end estimate for conversion is \$700 per lamp. At this unit cost, the conversion could take 19 years or more to payback via energy savings (about \$1,100/year for all 30 lamps). 19 years is longer than the 10-year maximum term allowed under PG&E’s zero interest On Bill

Financing Program. If the conversion cost was \$366 or less per lamp, the LS-2 conversion could be paid back via energy charge savings over 10 years and thus would qualify for PG&E's program. It should be noted that On Bill Financing does not take into account maintenance savings following conversion.

Other sources of financing such as a loan through an energy services corporation or from Nipomo Community Services District would likely allow Blacklake Village to factor maintenance savings into the payback calculation. Maintenance savings nearly double the total savings captured through LED conversion and thus reduce the payback period to about ten years (assuming a \$700 per lamp conversion cost).

In summary, Blacklake Village *should* convert its 85 LS-1A and LS-1C lamps via PG&E's LS-1 LED Conversion Program. Blacklake Village *should not* convert its 75 LS-1D lamps. Blacklake Village should further evaluate the conversion cost for its 30 LS-2A lamps. At a conversion cost of \$366 per lamp or less, it is recommended that Blacklake Village conduct the conversion and use PG&E's zero interest On-Bill Financing Program. If the conversion cost is higher, Blacklake Village should evaluate other financing options (particularly those that consider maintenance savings) or establish reserves to fund the conversion.

Lamp Inventory

The Blacklake Village Street Light District is comprised of 190 HSPV street lamps. 30 lamps are owned, operated, and maintained by Blacklake Village and billed for electric service by PG&E via the LS-2 tariff. 160 lamps are served under the LS-1 tariff. For these lamps, some or all of the street light facilities are owned by PG&E. Blacklake Village pays PG&E for electric service as well as rental and maintenance of the LS-1 lamps.¹ The LS-1 tariff is further subdivided into LS-1A through LS-1F based on pole type and configuration. A list of street light terms and definitions is provided below as well as an inventory of Blacklake Village's lamps.

Street Light Terms

Photo controller: daylight sensor that turns street lights on and off at dusk and dawn

Luminaire: bulb, lighting fixture, and photo controller

Mast arm: bracket or support arm that attaches the luminaire to the pole

Pole: support for the mast arm and luminaire

Post: support for street lights served on tariff LS-1D and Blacklake Village's LS-2A street lights²; the luminaire is a post top fixture that is not attached to a mast arm

Shared distribution pole: a pole that supports a street light mast arm as well as other PG&E electric distribution system wiring or other non-street light equipment; LS-1A mast arms are supported by shared distribution poles

Street light only pole: a pole that is only used for street lighting service and does not support other electrical equipment

Street light: total street light facility potentially including a pole or post, mast arm, and luminaire

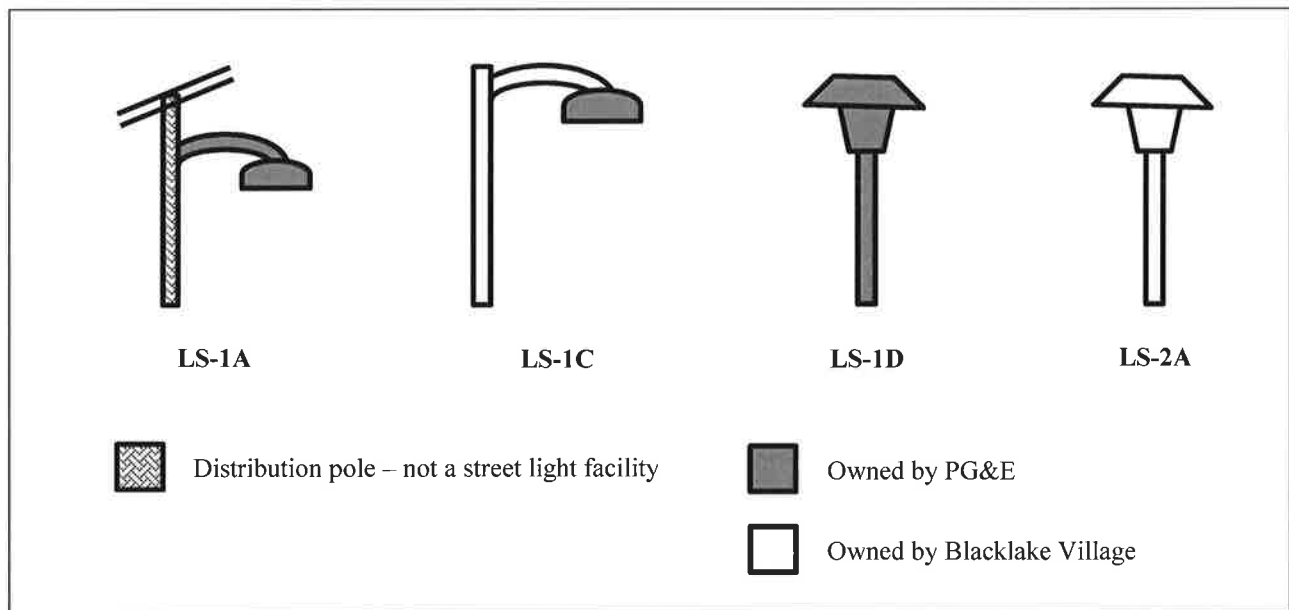
¹ PG&E's maintenance responsibility varies by LS-1 street light tariff.

² LS-2As can be supported by a variety of pole or post types. Blacklake Village's LS-2As are post top lamps

Table 1: Blacklake Village Street Light Inventory

Tariff	Blacklake Village Ownership	PG&E Ownership	Lamp Type	Count
LS-1A	None	Mast arm and luminaire attached to a shared distribution pole	HPSV 120 Volt 100 Watts	1
LS-1C	Mast arm and pole or post	Luminaire	HPSV 120 Volt 70 Watts	83
			HPSV 240 Volt 200 Watts	1
LS-1D	None	Street light only pole, post top lamp	HPSV 120 Volt 70 Watts	70
			HPSV 120 Volt 100 Watts	5
LS-2A	Post and luminaire	None	HPSV 120 Volt 70 Watts	30
Total				190

Figure 1: Ownership of Street Light Facilities by Tariff



HPSV equipment is considered an outdated technology that has been widely replaced by LED. PG&E no longer offers HPSV equipment for installations of new LS-1 street lights, and HPSV replacement parts are increasingly difficult to come by as HPSV manufacturers have exited the supply chain. LED lamps are now considered standard as they use significantly less energy, burnout less often (thus lowering maintenance costs), and produce higher quality light. The following sections offer recommendations regarding LED conversion for a subset of lamps.

LED Conversion of LS-1 (PG&E-Owned) Lamps

PG&E Conversion Program Background

Following implementation of Assembly Bill 719 in 2015, California's investor-owned utilities (including PG&E, Southern California Edison, and San Diego Gas & Electric) are required to offer an option for LS-1 customers to convert lamps to LED with no upfront costs so customers can reduce street light energy use. Under PG&E's LED program, there are no rental fees for LED equipment added to customer bills for LS-1A, LS-1B, LS-1C, LS-1E, and LS-1F lamps. For conversion of LS-1D lamps, there is an added charge called the LED Program Incremental Facility Charge. The incremental charge for LS-1D customers negates any energy bill savings and makes LED conversion uneconomical. Therefore, *it is not* recommended that Blacklake Village pursue LED conversion for its LS-1D lamps. *It is* recommended that Blacklake Village pursue conversion of its LS-1A and LS-1C lamps as conversion would result in bill savings.

Bill Analysis

As described above, LS-1 lamps are comprised of some or all street light equipment that is owned and maintained by PG&E. LS-1 customers pay PG&E energy charges to power the lamps as well as facilities charges, which are rental fees covering maintenance and the eventual replacement of PG&E-owned components at the end of their useful lives. By converting LS-1 lamps (with the exception of LS-1Ds), customers benefit from lower energy charges with no change to facilities charges.

Table 2 provides an analysis showing Blacklake Village's LS-1A and LS-1C street light bills before and after conversion using typical LED wattages. Following conversion of the identified 85 lamps, Blacklake Village will save approximately \$3,869.88 annually based on August 1, 2021 rates and typical LED wattages used by PG&E.

Table 3 provides a conversion analysis of Blacklake Village's LS-1D street lights. It is assumed that existing LS-1D HPSVs would be replaced with Contempo fixtures manufactured by American Electric Lighting (see the Attachment). It is not recommended that Blacklake Village request conversion of the LS-1D lamps due to added incremental facilities costs. Converting LS-1D lamps to LED would increase street lighting costs by about \$8,632 annually.

Table 2: LED Conversion of LS-1A and LS-1C Lamps based on August 1, 2021 Rates

Tariff	LS-1A	LS-1A	Monthly Savings per Lamp	Annual Savings or (Costs)
Lamp Type	HPSV 120 Volt 100 Watts	LED 34 Watts		
Monthly kWh	41	11.1		
Energy Charge	\$7.72	\$2.09		
Facilities Charge	\$6.85	\$6.85		
Incremental LED Charge	<u>\$0.00</u>	<u>\$0.00</u>		
Total PG&E Bill	\$14.57	\$8.94	\$5.63	x 1 lamp x 12 months \$67.56
Tariff	LS-1C	LS-1C		
Lamp Type	HPSV 120 Volt 70 Watts	LED 29 Watts		
Monthly kWh	29	9.4		
Energy Charge	\$5.46	\$1.77		
Facilities Charge	\$6.68	\$6.68		
Incremental LED Charge	<u>\$0.00</u>	<u>\$0.00</u>		
Total PG&E Bill	\$12.14	\$8.45	\$3.69	x 83 lamps x 12 months \$3,675.24
Tariff	LS-1C	LS-1C		
Lamp Type	HPSV 240 Volt 200 Watts	LED 73 Watts		
Monthly kWh	81	24.8		
Energy Charge	\$15.26	\$4.67		
Facilities Charge	\$6.68	\$6.68		
Incremental LED Charge	<u>\$0.00</u>	<u>\$0.00</u>		
Total PG&E Bill	\$21.94	\$11.35	\$10.59	x 1 lamp x 12 months \$127.08
			Total Annual Savings	\$3,869.88

Table 3: LED Conversion of LS-1D Lamps based on August 1, 2021 Rates – NOT RECOMMENDED

Tariff	LS-1D	LS-1D	Monthly Savings per Lamp	Annual Savings or (Costs)
Lamp Type	HPSV 120 Volt 70 Watts	LED 38 Watts		
Monthly kWh	29	12.8		
Energy Charge	\$5.46	\$2.41		
Facilities Charge	\$9.33	\$9.33		
Incremental LED Charge	<u>\$0.00</u>	<u>\$12.77</u>		
Total PG&E Bill	\$14.79	\$24.51	(\$9.72)	x 70 lamps x 12 months (\$8,164.80)
Tariff	LS-1D	LS-1D		
Lamp Type	HPSV 120 Volt 100 Watts	LED 44 Watts		
Monthly kWh	41	14.5		
Energy Charge	\$7.72	\$2.73		
Facilities Charge	\$9.33	\$9.33		
Incremental LED Charge	<u>\$0.00</u>	<u>\$12.77</u>		
Total PG&E Bill	\$17.05	\$24.83	(\$7.78)	x 5 lamp x 12 months (\$466.80)
			Total Annual Savings	(\$8,631.60)

LED Conversion of LS-2 (Blacklake Village-Owned) Lamps

As shown in Table 1, Blacklake Village owns and operates 30 LS-2 lamps. As the owner of the lamps, Blacklake Village would be the party responsible for converting the lamps to LED. Several options are available. Blacklake Village could hire its own contractor and manage the process or use PG&E's LED Turnkey Replacement Program. Under PG&E's Turnkey Program, PG&E manages the LED conversion process (hiring the contractor, disposing of the HPSV lamps, quality control, etc.) so there is minimal administrative burden for the customer. Alternatively, Blacklake Village could bid out the conversion to independent contractors and manage the process itself. Blacklake Village could fund the conversion via a loan from the Nipomo Community Services District (NCSO), use financing available through an energy services corporation (ESCO), or use On-Bill Financing from PG&E.

Bill Analysis

Blacklake Village has 30 LS-2A 70 Watt HPSV lamps that can be converted to 38 Watt LED lamps with Contempo fixtures. The monthly energy saving per lamp would be \$3.05 based on the August 1, 2021 energy rate. The annual energy charge savings would be \$1,098.00 for all 30 lamps.

In addition to energy savings, Blacklake Village would save maintenance expenses related to burned out HPSVs following conversion to LED. LED fixtures do not have disposable components requiring regular replacement. A typical HPSV lamp would be expected to burnout three or four times over the life of a typical LED lamp. LEDs occasionally have operational issues upon installation, but such issues are covered by the manufacturer's warranty. A typical HPSV lamp lasts for 72 months before burning out. Nipomo CSD staff estimate the cost to replace a burned-out lamp at about \$200 per lamp. This cost amortized over 72 months is \$2.78 per lamp per month. For all 30 LS-2A lamps, the total maintenance savings is estimated at \$1,000.80. The combined maintenance and energy savings following conversion of LS-2A lamps to LED is \$2,098.80 as shown in Table 4.

Table 4: LED Conversion of LS-2A Lamps based on August 1, 2021 Rates

Tariff	LS-2A	LS-2A	Monthly Savings per Lamp	Annual Savings
Lamp Type	HPSV 120 Volt 70 Watts	LED 38 Watts		
Monthly kWh	29	12.8		
Energy Charge	\$5.46	\$2.41		
Facilities Charge	\$0.21	\$0.21		
Incremental LED Charge	<u>\$0.00</u>	<u>\$0.00</u>		
Total PG&E Bill	\$5.67	\$2.62	\$3.05	x 30 lamps x 12 months \$1,098.00
Maintenance Savings			<u>\$2.78</u>	x 30 lamps x 12 months <u>\$1,000.80</u>
Total Savings			\$5.83	\$2,098.80

Cost of Conversion (High-end Planning Level Estimate)

Typical costs of conversion including materials and labor range from about \$300 to \$700 per lamp. It is expected that Blacklake's LS-2A lamps would fall in the higher end of the range as they are decorative lamps on fiberglass poles. Assuming a cost of \$700 per lamp, a rough, planning level cost estimate for conversion is \$21,000. This amount should be independently verified through actual contractor bids or an analysis by PG&E.

Financing Options

As shown in Blacklake Village's 2021 street light rate study, reserves are not currently available to convert the lamps, so financing is needed. Financing options include:

Loan from NCSD: Blacklake Village could request a loan from the Nipomo Community Services District to fund conversion. The loan would likely be paid back with interest set at the Local Agency Investment Fund (LAIF) rate.

ESCO Financing: Blacklake Village could solicit bids from energy services corporations for the conversion plus financing. The selected ESCo would fund the upfront cost of conversion and Blacklake Village would use energy and maintenance cost savings to pay back the ESCo over time.

PG&E's On-Bill Financing: Using either an independent contractor or PG&E's Turnkey Program for conversion, Blacklake Village could participate in PG&E's On-Bill Financing (OBF) program. OBF consists of interest free loans of up to ten years for energy efficiency projects. Loans are repaid via energy charge savings on monthly bills and do not factor in maintenance savings.

Payback Period

At a high-end conversion cost of \$21,000 and an annual energy savings of approximately \$1,100, the conversion cost would be paid back in about 19 years (LEDs have a service life of 20 years). It should be noted that the 19-year payback does not include maintenance savings. If the cost of conversion was \$366 per lamp or less, the payback period would be ten years or less and the project would qualify for PG&E's OBF.

If Blacklake Village pursues other financing mechanisms, maintenance savings could likely be included in the payback analysis. At a conversion cost of \$21,000 and total annual savings of about \$2,100 (energy plus maintenance savings), the payback period falls to ten years with a conversion cost of \$700 per lamp.

ATTACHMENT: Potential LED Fixtures

LED Decorative Fixtures



Granville LED (Acorn)
(Holophane)

*Available in Black, Green & Bronze

HPSV	3K & 4K
70 Watt	26 Watt
100 Watt	39 Watt
150 Watt	60 Watt



Contempo (LED)
(American Electric Lighting)

*Available in Gray

HPSV	3K & 4K
70 Watt	38 Watt
100 Watt	44 Watt
150 Watt	71 Watt



Salem Gen II
(General Electric)

*Available in Black

HPSV	3K & 4K
70 Watt	27 Watt
100 Watt	43 Watt
150 Watt	74 Watt



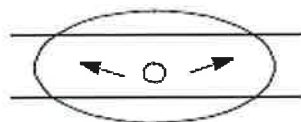
Memphis LED, Pedestrian
(Holophane)

*Available in Black, Green & Bronze

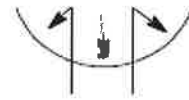
HPSV	3K & 4K
70 Watt	27 Watt
100 Watt	38 Watt
150 Watt	51 Watt

LED Light Pattern

Type 3



Type 5



*Type 5- Not available for Memphis fixture