

# Immediate Refuse Truck Purchase and Long Term Cost Implications

To Mayor and Council | From Rick Smith, Superintendent of Public Works

Date October 2, 2026 | Purpose Immediate replacement decision and its long-term financial and maintenance effects

Bottom line: Pennington needs to begin procurement of a replacement rear loader now. Both existing rear loaders are out of service, and waiting for a fully developed EV site plan would prolong an already unacceptable fleet gap. The practical near-term action is to secure a formal Sourcewell price and factory build slot for the approximately \$340,000 single-rear-axle diesel while continuing the electrical and site work needed to determine whether a future EV is operationally and financially sound. Today's purchase will establish 15 years of fuel or electricity exposure, maintenance duties, infrastructure responsibility, major-repair risk and eventual resale value.

## Immediate Decision

| Option                     | Configuration                                                                           | Quoted capital                     | Readiness                                                                                                |
|----------------------------|-----------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Budget-quote diesel</b> | Leach 20 CY on Kenworth T480 (Freightliner/Western Star alternatives); single rear axle | \$340,000 budget quote             | Procurement can begin after the formal Sourcewell quote and authorization; normal factory build required |
| <b>Quoted EV</b>           | Kenworth L770E + Leach 29 CY; tandem rear axle                                          | \$611,222 truck + \$48,154 charger | Truck quoted, but site work, charging cost and electrical compatibility remain unresolved                |

## Immediate Capital Commitment

| Option                        | Gross purchase/startup     | Grant                   | Local capital before financing |
|-------------------------------|----------------------------|-------------------------|--------------------------------|
| <b>Diesel</b>                 | \$340,000                  | No charger/site project | \$340,000                      |
| <b>EV - limited site work</b> | \$659,376                  | (\$441,000)             | \$268,376                      |
| <b>EV - planning base</b>     | \$659,376 + \$175,000 site | (\$441,000)             | \$393,376                      |
| <b>EV - high site case</b>    | \$659,376 + \$400,000 site | (\$441,000)             | \$618,376                      |

The planning base also carries a \$17,640 allowance for one year of interest on grant reimbursement timing. Actual BAN/bond terms and grant payment timing could move these amounts materially.

## Why the Borough Must Act Now

- Both existing rear loaders are down; one is approximately 20 years old and faces repairs above \$30,000.
- The prior \$275,000 in-stock diesel truck was sold to another municipality. The replacement diesel option is a \$340,000 budget quote and must proceed through the normal specification, approval, purchase-order and factory-build process.
- The diesel budget configuration is a Leach 20-yard rear loader on a Kenworth T480 chassis (with Freightliner or Western Star also listed as alternatives) and a single rear axle. Compared with the tandem-axle EV, it uses four fewer tires and avoids tandem-axle tire scrub during frequent turns, reducing tire replacement expense and localized pavement wear.
- The 20-yard diesel may require additional disposal trips compared with the 29-yard EV. Conversely, no preliminary charger/site work has been completed, and the existing electrical service, solar array and battery-backup system must be evaluated before an EV charging load is added.
- Although neither truck can be placed in service immediately, the diesel can enter the normal procurement and factory-build process now. An EV award would also commit the Borough to unresolved charging, electrical, fire-safety and service-support requirements. With no fleet depth, delaying the replacement order increases operational risk every week.

## Long Term Cost of the Immediate Purchase

The following model is not intended to delay the purchase. It shows the long-term spending and care obligations created by the immediate decision. It uses 2026 planning dollars, 15 years of service and a 10-year financing proxy at 4%. At the Borough's direction, it excludes downtime, rentals and contracted collection.

| Scenario                  | 15-year cost | Difference vs diesel | Average Annualized Ownership Cost |
|---------------------------|--------------|----------------------|-----------------------------------|
| Diesel - base             | \$825,449    | -                    | \$55,030                          |
| EV - managed / low site   | \$545,580    | (\$279,869)          | \$36,372                          |
| EV - planning base        | \$797,334    | (\$28,115)           | \$53,156                          |
| EV - conservative battery | \$922,334    | \$96,885             | \$61,489                          |
| EV - high-risk            | \$1,462,739  | \$637,289            | \$97,516                          |

## Long Term Spending Responsibilities

| Cost category                         | Diesel     | EV                                |
|---------------------------------------|------------|-----------------------------------|
| Net acquisition/startup               | \$340,000  | \$393,376                         |
| Financing interest                    | \$79,189   | \$91,621                          |
| Grant reimbursement carry             | \$0        | \$17,640                          |
| Fuel / electricity                    | \$165,960  | \$102,197                         |
| Body, chassis and charger maintenance | \$245,000  | \$177,000                         |
| Tires                                 | \$15,300   | \$25,500                          |
| Battery reserve                       | \$0        | \$0 base / \$125,000 conservative |
| End-of-life resale or auction credit  | (\$20,000) | (\$10,000)                        |

## Resale Auction Value and Depreciation

- **Diesel resale.** The model gives the diesel a \$20,000 end-of-year-15 auction credit. Diesel refuse trucks have an established municipal and commercial secondary market, although age, corrosion, engine hours, emissions-system condition, body wear and maintenance history will determine the actual result.
- **EV resale.** The model gives the EV a \$10,000 end-of-year-15 auction credit. The used EV refuse-truck market is still immature, and value will depend heavily on documented battery health, remaining OEM support, high-voltage component availability and whether another operator can use the charging configuration. Charger and site improvements are treated as having no resale value.
- **Asset care.** Either truck should have complete maintenance, inspection and repair records. For diesel, protect the chassis and body from corrosion and maintain the engine, aftertreatment, hydraulics and packer. For EV, also retain battery state-of-health reports, charging history, thermal-system records and high-voltage inspection documentation.

These residual-value figures are conservative planning allowances, not appraisals or guaranteed auction proceeds. Every \$10,000 change in eventual proceeds changes the modeled 15-year cost by the same amount. Any grant-related ownership or disposition requirements should be confirmed before EV resale proceeds are assumed.

## What the Electric Bill Shows

The DPW GLP meter used 9,360 kWh in 32 days, reached 23.2 kW measured demand, and incurred \$2,211.71 in electric charges. The marginal energy component is about \$0.1187/kWh, but demand and capacity charges are substantial. A 60 kW charger could set a much higher facility peak unless charging is actively managed.

| Item                               | Modeled amount | Basis                                              |
|------------------------------------|----------------|----------------------------------------------------|
| Annual EV energy at meter          | 15,275 kWh     | 4,700 miles x 3.25 kWh/mile                        |
| Variable energy cost               | \$1,813/year   | 15,275 kWh x \$0.118699                            |
| Expected demand/capacity allowance | \$5,000/year   | Temporary allowance pending study/utility analysis |
| Planning-base electricity          | \$6,813/year   | \$102,197 over 15 years                            |
| Diesel fuel                        | \$11,064/year  | 5,532 miles / 3.0 mpg x \$6/gallon                 |

**Electricity can still save operating dollars**, but the savings do not by themselves resolve the unknown charger/site cost, financing, battery risk or lack of fleet backup.

## Maintenance and Asset Care Over 15 Years

| Item                    | Diesel                      | EV                                           | Comment                                                          |
|-------------------------|-----------------------------|----------------------------------------------|------------------------------------------------------------------|
| Body / hydraulics       | \$7,500/year                | \$7,500/year                                 | Common severe-duty packer reserve                                |
| Chassis / powertrain PM | \$4,000/year                | \$2,500/year                                 | Oil/filters/aftertreatment vs. EV cooling/HV inspections         |
| DEF / emissions         | \$1,500/year                | Not applicable                               | Diesel planning reserve                                          |
| Charger routine service | Not applicable              | \$1,000/year                                 | Service agreement not quoted                                     |
| Major repair reserve    | \$50,000 in year 10         | \$12,000 charger in year 10                  | EV high case uses \$35,000 charger repair                        |
| Tire sets               | 3 sets x 6 tires = \$15,300 | 3 sets x 10 tires = \$25,500                 | Diesel has four fewer tires and avoids tandem-axle turning scrub |
| Traction battery        | Not applicable              | \$0 base / \$125k conservative / \$250k high | Calendar aging matters because annual mileage is low             |

## EV Conditions That Should Be Contractually Established

- Actual winter route demonstration using Pennington's route and disposal trip.
- Guaranteed minimum usable battery capacity and end-of-route reserve.
- Payload scale ticket at full legal weight.
- Charger redundancy or a contingency charging plan.
- Confirmed compatibility with the shop's electrical service, solar and battery-backup system.
- Local high-voltage service coverage with a binding response time.
- A loaner or substitute truck requirement during extended warranty repairs.
- Written fire-department and facility-safety review.
- Retention of a dependable diesel truck as operational backup.

## Items to Confirm Before Award

- Formal Sourcewell diesel price, final chassis selection and specifications, payload, warranty, and a firm build and delivery schedule. The current \$340,000 figure is a budget quote only.
- Twelve months of DPW electric interval/demand data, utility charging tariff, and whether the 60 kW charger can be scheduled without increasing facility peak or capacity tags.
- Engineer/utility cost for electrical service, switchgear, transformer, trenching, permitting, fire review, and integration with the existing solar/battery system.
- Kenworth/PACCAR written traction-battery warranty, capacity-retention guarantee, replacement price, local service response and loaner terms.
- Actual route miles, diesel gallons, disposal weights and frequency of the extra trip required by the smaller 20-yard body.
- Actual BAN/bond interest rate, term, issuance cost and grant reimbursement schedule.

Recommended action: authorize procurement of one replacement rear loader now and obtain the formal Sourcewell price, specifications and firm factory-build schedule for the approximately \$340,000 single-rear-axle diesel. Continue the EV electrical and site evaluation as a separate readiness project for the next fleet decision. This starts the path back to dependable collection service without committing Pennington to an EV before charging infrastructure, site cost, winter-route performance, battery support and backup capacity are established. If an EV is added later, retain the diesel as dependable operational backup.