

**BART**

**El Cerrito Plaza On-Street  
Parking Study**

**Final Report**

Work Plan No. A.04-01

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BART Project No. 91GL023

Second Draft | January 15, 2021

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 277322

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## Introduction

BART and the City of El Cerrito identified the BART patron parking lots surrounding El Cerrito Plaza BART station as an opportunity site for transit-oriented development (this project is referred to throughout this document as “ECP TOD”). In November 2020, BART selected a developer to construct 600-800 residential units and potentially replace a limited amount of existing off-street parking for BART riders. BART’s goals for TOD at the El Cerrito Plaza station include contributing to limited Bay Area housing stock, including below market rate housing, reducing GHG emissions by growing system ridership, and providing a comfortable customer experience.

Efficient management of parking supply and demand near the station can enable a harmonious relationship between BART and its El Cerrito neighbors, while modeling best practices in sustainable, healthy, and lively urban development. The level of replacement parking at the new TOD is yet to be determined. Some of it may be reserved for disabled placard holders, carpools, and electric vehicles. El Cerrito presently has minimal parking management and staff, conducting limited enforcement of existing regulations (e.g., no parking zones). A parking management program in the vicinity of the station could help:

- Encourage BART patrons to use alternative modes to access BART;
- Manage the impact of parking demand on local streets by preserving spaces for residents or other special needs;
- Help offset the loss of patron parking by providing convenient parking for those who don’t have other viable options to access BART.

The following report uses feasibility modeling and case study research to evaluate a potential on-street parking management program in El Cerrito.

The feasibility model examines the potential impacts, costs and revenues from implementation of a new on-street parking management program near the station. It seeks to estimate the impact of the new ECP TOD on the surrounding residential neighborhood<sup>1</sup> in a base case (do nothing) scenario, and how those impacts would change if the City begins charging a fee for currently unregulated street parking.

Specifically, the feasibility model estimates the following parameters:

- The **demand for on-street parking**, both regulated (residential parking permit, or RPP) and unregulated, in a **base case** scenario, where the future TOD reduces the parking supply at BART and there are no changes to the current RPP boundaries or regulations;
- The impact of a new potential **on-street paid parking program**, in combination with reduced parking supply at BART, on the behavior of BART

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<sup>1</sup> This study did not assess likely impacts on the El Cerrito Plaza shopping center, located south of the BART station.

patrons who currently drive and park at or near the El Cerrito Plaza station. Specifically, this study estimates how many will continue to drive and park at or near the El Cerrito Plaza station, how many will use a different mode (such as walk, bike or take transit) to reach the station, how many will go to a different BART station, and how many will stop using BART entirely;

- The optimal **pricing structure** for on-street parking that balances revenue generation, incentivizing a shift to alternative modes, and preserving an affordable option for those who have no choice but to drive and park;
- The **capital and operating costs** to implement a modern parking management program;
- The **net revenue** which could be generated by the program.

A summary of the feasibility analysis is included in Section 3 of this report.

The case studies illustrate three different approaches to all-day, on-street parking management: Walnut Creek, California; Evanston, Illinois; and Aurora, Colorado. Lessons learned from these case studies are summarized in Section 2 and inform this report's recommendations for managing on-street parking surrounding El Cerrito Plaza station. Details on each of the case studies may be found in Appendix: Case Study Memo.

Findings from the case study research and feasibility analysis guide the recommendations in Section 4, which also discusses the limits of this analysis and opportunities for future exploration.

## 2 Lessons from case study communities

To estimate the costs and revenues associated with starting a new parking management program, and to learn from the successes and challenges of others, Arup searched for similar programs across North America. This section summarizes our approach to selecting these case studies, and what we learned from each.

ECP TOD is adjacent to high-frequency regional rail, largely surrounded by lower-density residential and commercial development, and proximate to steep terrain that presents challenges to walking or biking. Currently, more than half of BART riders walk to the station. While projects of similar scale and goals in similarly suburban contexts have been proposed elsewhere (e.g., greater Washington, D.C., greater Toronto), we were unable to locate any completed projects that perfectly matched the circumstances at El Cerrito Plaza. Consequently, this memo takes a ‘quilting’ approach, stitching together lessons learned from three different cities. All three case study cities have paid, all-day (6-12 hours) parking management programs. Beyond that, each case study reflects different facets of El Cerrito Plaza station’s context and goals, as noted in **Table 1**, below.

**Table 1: Case Study Characteristics**

Characteristics of Parking Program or Context	Walnut Creek (downtown)	Evanston (Main St Metra Station)	Aurora (Ilif Station)
All-day, on-street parking management (6-12 hours)	x	x	x
Small- to mid-sized city	x	x	x
Bay Area location (for cost/revenue calibration)	x		
Mostly single-family residences, with some multifamily		x	x
Minimal off-street parking for transit riders (to align with post-construction parking availability at ECP)		x	
Regionally significant attractor (eg regional rail station, major retail/dining destination, or job center)	x	x	
Parking management program is < 5 years old			x

Interviews with parking staff at the three case study cities provided crucial operating and performance information, supplemented by further research into publicly available documentation. Each parking management program responds to the unique needs of its location and population, and is documented individually in Appendix: Case Study Memo. While not included as one of our three case studies, we also gathered cost and revenue information from the City of Berkeley to provide one additional Bay Area-specific data point for cost and revenue estimates.

While each city manages a parking system unique to its needs, common themes emerged. Key components of effective parking management include early and ongoing public outreach; designing a

program to flexibly respond to city, resident, and business needs; and understanding how to effectively deploy a suite of technologies.

## 2.1 Public Outreach

Early and ongoing community outreach and education were primary concerns in both Walnut Creek and Aurora. In each city, engagement began years before new parking rules went into effect (five years prior in Walnut Creek and two years prior in Aurora). In Walnut Creek, the city spent three years doing extensive community engagement to produce a Parking Management Plan in 2011, which directed the city's first parking ordinance that followed in 2014. Walnut Creek continues to reach out to residents during other planning processes that impact parking – most recently, the city hosted meetings, met residents at public events (e.g., farmers' markets), and solicited online feedback as part of their citywide Transportation Strategic Plan (Rethinking Mobility), adopted in 2020.

Importantly, Walnut Creek's parking management system invests in hardware and a third-party data analytics contract to allow for real-time, continuous data collection that facilitates transparency and data-driven decision-making. According to Walnut Creek city staff, this approach has significantly improved understanding of the benefits and tradeoffs of parking management among decisionmakers and the public. Further, this data provides a real-time census of parking use, which replaces the expensive biannual surveys the city formerly relied on to inform parking policy.

Aurora deployed multiple tools to manage public reception of their brand-new program, which launched in 2017. Formerly, the City had not enforced the limited existing parking ordinances (e.g., no parking zones), and all parking was free. The City undertook an extensive citywide education campaign to alert residents to the advent of enforcement – this included large commercial banners and homeowners' association meetings along the new light rail line. For the first few months of the new program, courtesy notices were given instead of citations.

Evanston has not recently conducted targeted parking management outreach, in part because the program structure has not changed significantly in recent years.

## 2.2 Program Flexibility

In all of the case studies, parking management programs aim to making parking easier by effectively managing supply and demand. The ability to change parking policies – primarily time limits and pricing – is important to running a program that balances supply with demand, and costs with revenues.

In Evanston, the parking rate structure must be approved by the nine-member City Council. Although the parking department suggests preferred, market-aligned rates, the Council's rates are currently significantly lower than market, hampering program effectiveness. Although the Council has approved marginal rate increases in recent years, the growth in parking revenues have not kept pace with operational costs, and the gap between the two continues to widen. However, revenue from citations makes up the difference and the city's parking program still covers its costs overall.

Walnut Creek and Aurora may adjust parking rates and time limits without Council approval. In 2017, due to low demand, Walnut Creek staff re-evaluated the pricing and time limits of its meters. Guided by data collected from parking sensors and the city's stated goal of 85% occupancy, a new zone was created – “Purple Poles” – on the periphery of downtown (including near the Walnut Creek BART station) to provide lower hourly rates and the absence of time limits. Now, the city on-street parking system includes two zones, tiered by pricing and time limits based on demand. **Error! Reference source not found.** [missing] illustrates the layout of these two zones. Data collected after the policy change indicates that it was a ‘win-win’ for businesses and parking patrons: it successfully shifted some all-day parking demand away from the downtown core, allowing for higher turnover of prime spaces – which is good for businesses – and created a more affordable parking option for all-day parkers, who park on the periphery, such as BART customers who use street parking near the Walnut Creek BART station. Data shows these all-day parkers are mostly employees of downtown businesses.

Aurora created a parking management program in anticipation of a dramatic increase in parking demand when a new Regional Transportation District (RTD) light rail line opened in 2017. This program included building a new, 600-space garage at the RTD Ilif Station, as well as paid parking on streets surrounding the station. Ridership on the new light rail, and therefore parking demand at the station, have been consistently lower than expected. To encourage greater use of the garage and on-street spaces, the city lowered parking rates by fifty cents every eighteen months since opening. Although the city did not meet its revenue goals for the parking program prior to the onset of COVID, city staff are hopeful that new TOD and infill development in the station area will increase demand in the future.

Unique among our three case studies, Aurora contracts with third parties for nearly all parking operations. This allows for flexibility to grow/reduce staffing levels as demand changes. This flexibility has allowed for cost savings during COVID. Additionally, it enabled the City's enforcement contractor to purchase necessary Automated License Plate Recognition (ALPR) technology at the beginning of the program, while spreading out the cost to the city's budget across multiple years.

## 2.3 Technology

A suite of technologies supports efficient, modern parking management. The three case study cities primarily adopted technologies in service of three goals: smooth customer experience, minimal operating costs, and feedback to inform program management.

All three cities use either smart meters or pay stations in combination with a mobile parking payment technology, which allows customers to pay hourly by mobile phone or online; pay or appeal citations; and view parking history, notifications, and receipts. In Evanston, the mobile payment system also allows users to load cash onto a “mobile wallet” at the City Collector's Office, and to buy monthly City parking permits. The applications charge a thirty-five cent per-transaction fee; all three cities pass this cost on to the user.

Evanston and Aurora both use ALPR technology for enforcement. Parking enforcement by ALPR also allows for management of monthly or annual permits. Evanston's residential parking permit program uses no stickers or other physical permits, instead managing permitting through a digital system.



Walnut Creek employs staff who patrol the management area and write manual tickets, although the city indicated it is interested in adopting technologies to reduce the cost of this method.

Walnut Creek uses the most robust suite of technologies to support its parking policy and decision-making, as well as to communicate with the public. A contract with ParkMe and Inrix uses location-based data, enabled by the city's sensors, to allow people parking in Walnut Creek to share real-time parking occupancy data. Parking availability is filterable by monthly, reservable, or daily parking spaces. People curious about parking availability can consult the city's website or the ParkMe mobile app for real-time information.

Following a 116-sensor pilot in 2019, Walnut Creek is working to install sensors for most free and paid parking spaces within the parking management area. The sensors, which are either drilled into the pavement or mounted on the road's surface, allow real-time, ongoing monitoring of parking utilization.<sup>2</sup> For an annual cost of around \$75,000, Smarking, a data analytics company, assesses the data from sensors and ALPR and maintains a data dashboard, provides analytics reports to City Council and the Transportation Commission, conducts (limited) revenue modeling, and provides public-facing information. The dashboard and data analysis tools centralize parking data to help the city understand supply, demand, and needed rate adjustments. Smarking interprets and formats data to provide city staff with material for public-facing updates.

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<sup>2</sup> Frog Parking, a New Zealand-based company, installed both pilot and permanent sensors; a city board meeting agenda report from [July 16, 2020](#) discusses the installation.

### 3 Feasibility analysis summary and findings

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Arup examined the potential impacts, costs and revenues associated with a new on-street parking management program. Our investigation focused on estimating the impact of the new TOD on parking availability in the surrounding neighborhood in a base case (do nothing) scenario, and how parking availability would change if the City begins charging a fee for currently unregulated street parking.

Arup evaluated two scenarios:

1. *Base Case Scenario (Do Nothing)* assumes the TOD at BART is completed but no additional on-street parking management is implemented. This scenario illustrates the potential impact of the TOD on regulated residential blocks – those covered by the Residential Parking Permit (RPP) program<sup>3</sup> - during average weekdays. It also provides a baseline assessment of anticipated parking demand on unregulated blocks.
2. *Scenario 1 Parking Management Program* assumes a parking management program is implemented in parallel with TOD at the station. This parking management program introduces paid parking on currently unregulated blocks up to a half-mile (or 10-12 minute-walk) from the station. This scenario assumes no changes to the regulated residential blocks or the RPP program itself.

A fundamental premise of this study is that the TOD at the BART station will reduce the number of off-street parking spaces available in the three BART parking lots, and neighborhood streets will see a resulting increase in on-street parking demand from BART patrons accessing the station. The BART parking lots currently have approximately 740 parking spaces designated for BART patrons. For Scenario 1, we are assuming approximately 250 of those spaces would be replaced for use by BART customers,<sup>4</sup> with use restrictions not yet determined. We also assume the price of BART parking will remain significantly below market rate.

#### 3.1 Base Case (Do Nothing) Scenario

The Base Case Scenario provides a view of future parking conditions where TOD has reduced the parking supply at BART and there are no changes to the currently unregulated on-street parking. The estimated impacts are summarized below for both residential blocks (currently regulated as part of the Residential Permit Program, or RPP) and ‘unregulated’ blocks (no parking restrictions).

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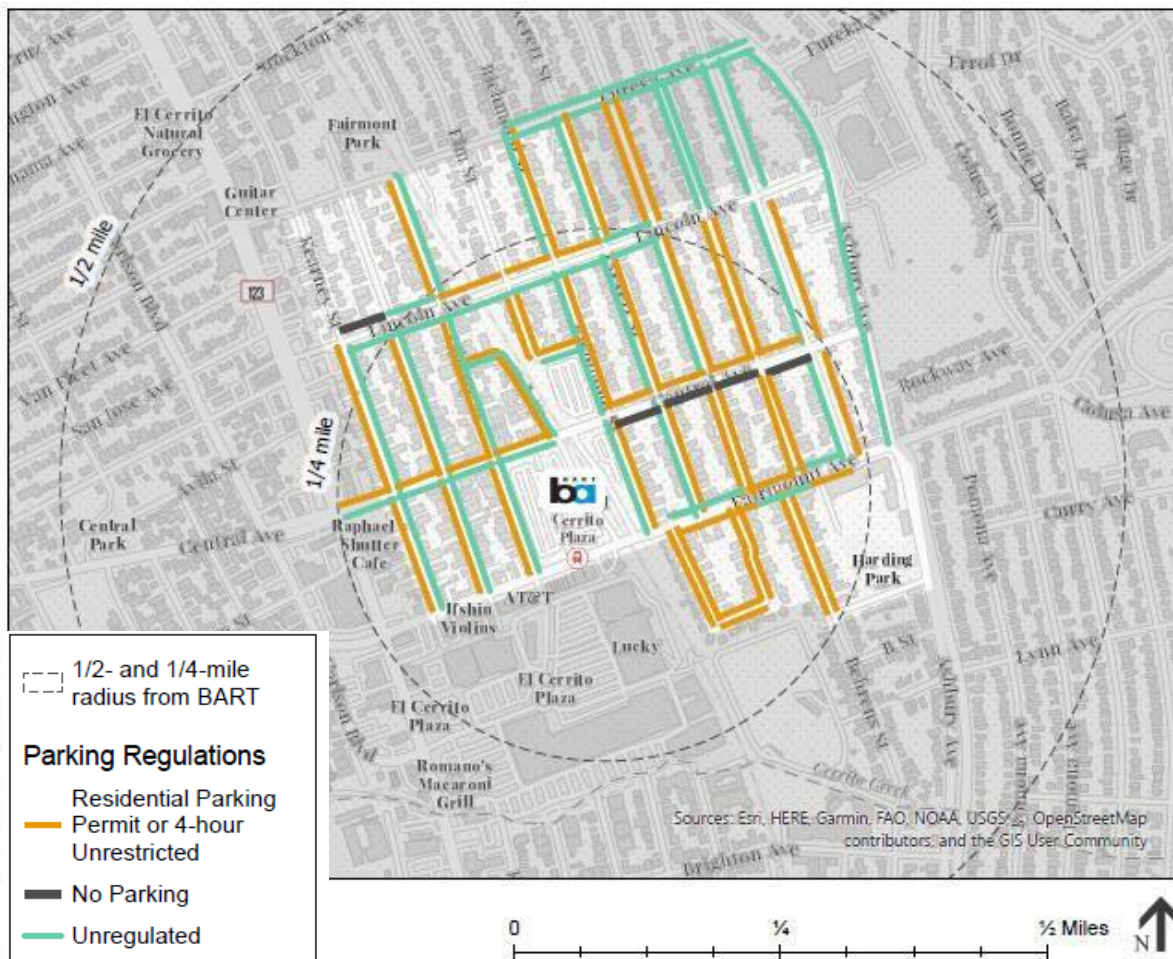
<sup>3</sup> El Cerrito’s Residential Parking Permit program allows residents use of on-street parking spaces on certain blocks near BART stations, unrestricted by time limits or days of the week. Use of the same spaces by people without a permit is limited to 4 hours on weekdays between 7:00 am and 6:00 pm.

<sup>4</sup> The 250 BART customer replacement parking spaces assumption is based on the replacement parking placeholder number that was considered in the El Cerrito Plaza TOD Developer Request for Qualifications (RFQ) issued in July 2020 which was used to ensure a controlled variable in the developers’ conceptual proposals and to understand the potential developers’ approaches to replacement parking in the design of the project. The actual number of replacement parking spaces will be determined during the project design/access planning phase of the development.

### 3.1.1 Unregulated On-Street Spaces

There are approximately 345 unregulated on-street spaces within a quarter-mile of the station, and an additional 760 unregulated spaces between a quarter- and a half-mile from the station, according to a 2020 parking inventory conducted by BART. Figure 1, below, shows a map of the station area that illustrates on-street parking regulations as of June 2020.

**Figure 1: Existing Parking Regulations near El Cerrito Plaza Station**



Approximately 300 vehicles parked in unregulated spaces within 1/4 mile surrounding the BART station, according to an occupancy survey conducted by Arup in January 2019. The current (pre-COVID) demand for on-street, unregulated parking is largely accommodated within 1/4 mile of the station.

In the Base Case Scenario, demand for unregulated spaces in the study area would grow to 700 -1,000 vehicles per day on average in 2035.

The additional demand is generated by the assumed loss of ~ 500 parking spaces in the BART parking lots when the TOD is built, along with forecasted increases in BART ridership due to system-wide improvements that are currently planned or under construction. This forecast also accommodates anticipated household and business growth in the area over time. As noted above, unregulated spaces within a quarter mile of the station were almost fully occupied during the one weekday surveyed in 2019. The additional daily parking demand in 2035, therefore, will be accommodated by unregulated spaces between one quarter (1/4) and one half (1/2) mile away, a 10-12 minute-walk from the station, with little remaining availability throughout the half mile study area if no change in user behavior is encouraged.

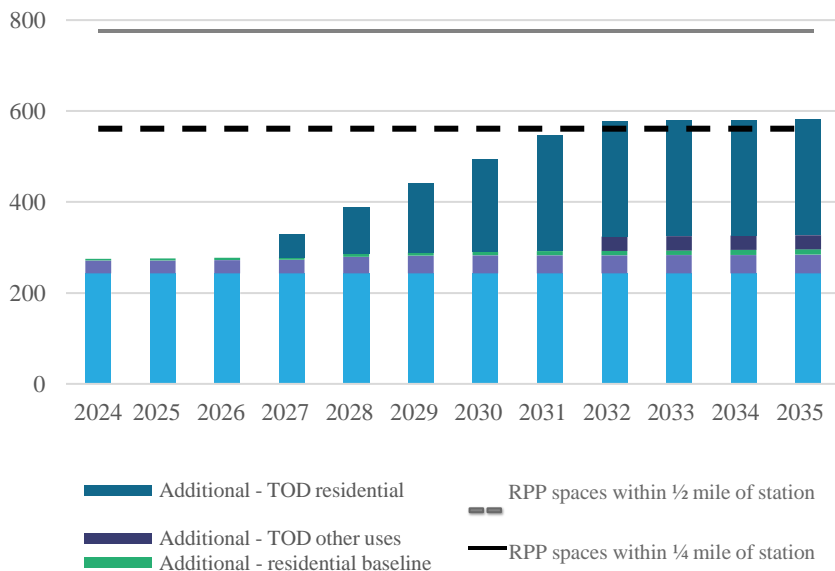
### 3.1.2 Regulated (RPP) spaces

In the Base Case scenario, future on-street demand for regulated (RPP) spaces by 2035 could double from 2019, up to 580 vehicles total (see Figure 2 **Projected demand for RPP blocks in Base Case, 2024-2035 (without retention of residential parking demand by TOD residents)**). The parking inventory of RPP spaces has sufficient capacity to accommodate that increased demand in 2035, with an average occupancy of 75%. However, the majority of the additional demand is concentrated in the quarter-mile area where attractors – the station, TOD and retail - are located. The average utilization in this area may reach 90%. Because the RPP spaces also serve as short-term (<4 hour) parking, a 90% utilization rate may be perceived as too high in the southwest portion of the study area, which is adjacent to the business district centered at Fairmount and San Pablo Avenue. In this area, a lower target of 80-85% may be more desirable.

A key factor in this high utilization rate is to what extent the residents of the ECP TOD will park their vehicles on street during weekdays. Residents of the ECP TOD will be eligible to apply for RPP permits, and many may choose to park their vehicles on street rather than in the garage associated with the TOD, due to the low cost of RPP permits (currently \$14 per year). The city expects to issue approximately one RPP per unit. An 80-85% utilization target could be achieved if 20% of the weekday parking demand from TOD households is accommodated within the TOD itself (approximately 50 vehicles per day).

If the TOD is unable to retain that parking demand within the development, it may be difficult to accommodate short-term parking turnover within the quarter-mile, particularly as the business district grows, and users may need to park beyond the quarter-mile area. Changes to the RPP, such as reducing

**Figure 2: Projected demand for RPP blocks in Base Case, 2024-2035 (without retention of residential parking demand by TOD residents)**



the number of permits available per household or increasing the cost, could help address this challenge. Alternatively, a subset of the currently unregulated spaces in the southwest portion of the study area could be designated for paid, short-term parking instead of all-day parking. However, such changes are beyond the scope of this analysis and were not modeled.

### 3.2 Scenario 1: Parking Management Program

This analysis modeled a parking management scenario that introduces daily rates for 500 metered spaces in currently unregulated areas, making no changes to the 560 RPP spaces, within a 10-12 minute walk (half-mile) from the station<sup>6</sup>. This scenario also assumes no significant changes to the price of BART off-street parking. Figure 2, below, shows an indicative Program boundary.

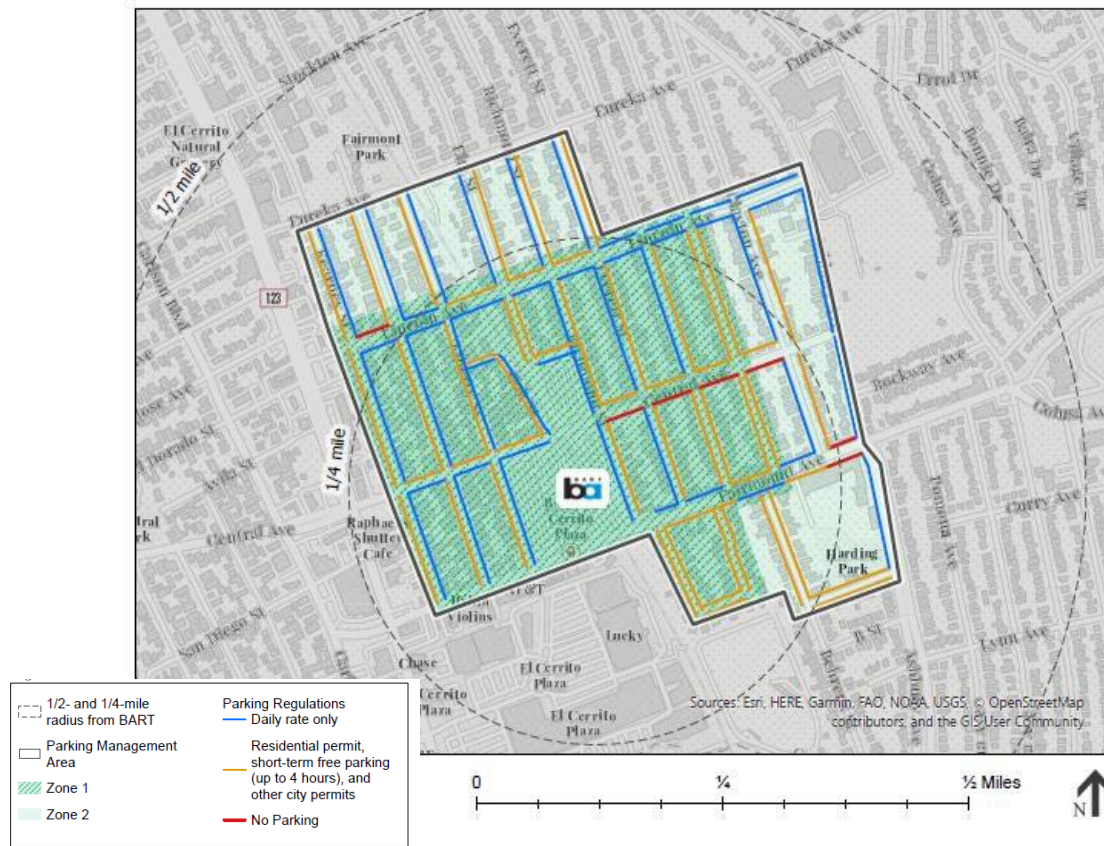
The scenario uses a two-tiered approach, where more desirable spaces closest to the station are charged a premium (Zone 1), while spaces further from the station are more affordable (Zone 2).

- Zone 1 includes the ~300 currently unregulated spaces within a quarter-mile of the station, which would charge a premium price of \$10-12 per day.
- Zone 2 includes subset of the 760 currently unregulated spaces between a quarter- and half-mile from the station, which would charge a more affordable rate of \$4-5 per day. Based on the estimated 2035 demand, we propose metering 200 of the 760 available spaces within the half-mile radius, and keeping the rest unregulated/free.

<sup>6</sup> We assume that a paid parking program for currently unregulated blocks does not impact the projected demand, performance and findings for currently regulated (RPP) blocks in the Base Case Scenario – as detailed in Section 3.1.2.



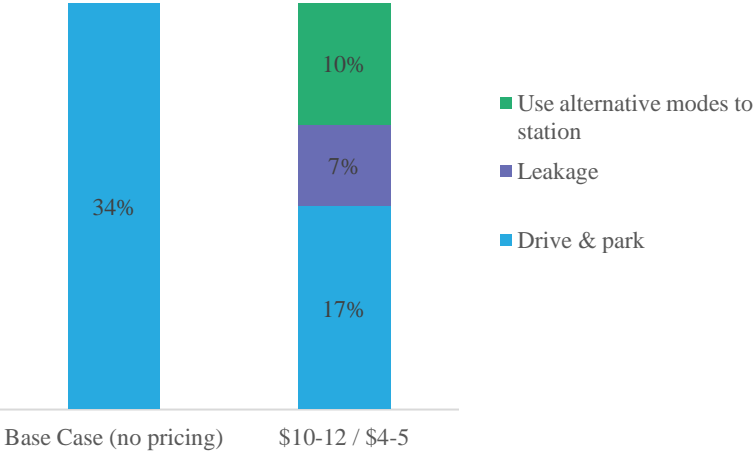
**Figure 3: Scenario 1 Proposed Parking Management Area (December 2020)**



### 3.2.1 Behavioral Change

The introduction of on-street pricing, in combination with the reduced supply of off-street parking at El Cerrito Plaza BART station, would have an impact on the travel choices of BART patrons who currently drive and park at or near the station. In Scenario 1, the relative share of drivers could be reduced by half, from its current 34% of BART home-origin trips to 17%. Around 10% of those who currently drive to BART are expected to use alternative modes to access El Cerrito Plaza station or increase carpooling to the station, while another 7% would either use another station or no longer use BART for their trip (defined as “leakage” in **Figure 4**).

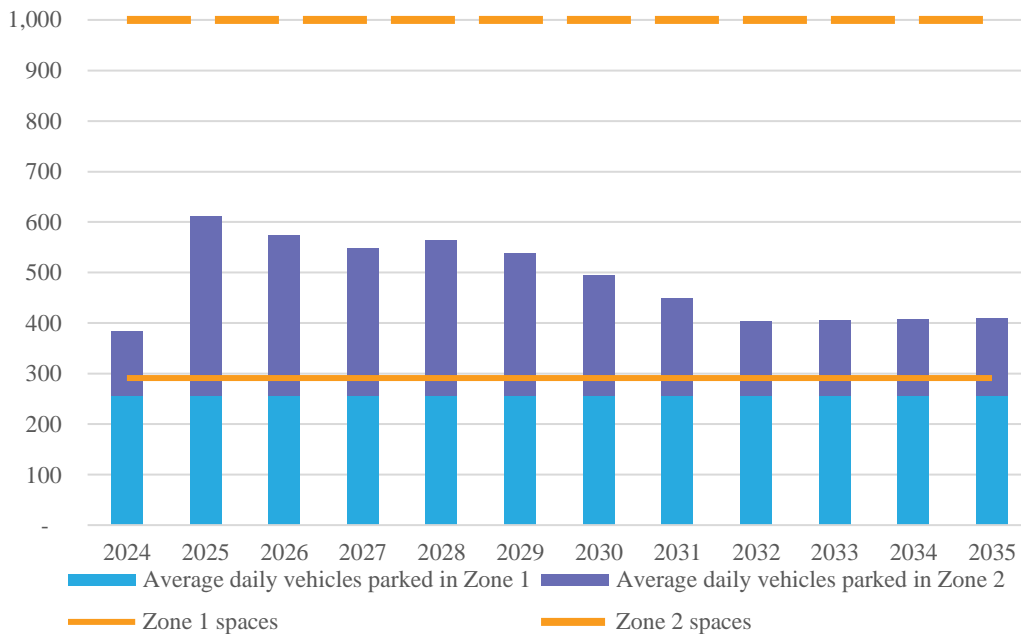
**Figure 4: Projected station access modal choice for BART patrons in the Base Case and Scenario 1 (% of home-origin trips, includes patrons who park either in BART lots or on street)**



### 3.2.2 Reduced parking demand from BART patrons

As a result of the behavior changes noted in Section 3.2.1, demand for parking at El Cerrito Plaza may fall from 1,360 daily vehicles in 2019 to 680 in 2035. Metering and pricing will help balance how and when spaces fill up in the morning hours, as patrons choose between convenience in Zone 1, lower pricing in Zone 2, or even free parking on unregulated blocks beyond the parking management area boundary. BART off-street parking is still expected to fill first, given both its convenience and low price (for this scenario, we assume the price of BART parking will remain significantly below market rate). As a result, 400 to 600 vehicles are anticipated to park in on-street, daily-fee spaces each weekday. User behavior may take some time to stabilize to the projected mode shift level (from 34% to 17%), so parking demand is anticipated to be higher in the first few years of the program and then stabilize at a lower level by 2035. This trend in on-street parking demand is illustrated in **Figure 5**, below.

**Figure 5: On-street parking demand on Daily-fee blocks with Parking Management Pricing, 2024-2035**



### 3.2.3 Parking Management Program technology, assets and capital costs

Scenario 1 assumes a robust set of modern tools and technologies are used to implement the parking management program. It follows the example of Walnut Creek in its choice of single-space parking meters, and investments in sensors and analytics to allow for data-driven program management. We selected this technology because we believe it best meets the goals articulated by the City of El Cerrito and BART. Other, lower-cost alternatives are available, but they do not provide the same quality of data monitoring and therefore will necessitate more of a trial-and-error approach to program management.

Our specific technology recommendations are as follows:

- **Daily-fee spaces in Zone 1 and Zone 2** are controlled by single-space parking meters. Based on our cost comparison, this technology is up to 30% more cost efficient than pay-stations on a cost per space<sup>7</sup>.
- **Payment** can be done directly at meters (debit or credit card), or with vendor app (i.e. Park Mobile).
- **Block sensors** for all spaces in Zone 1 (daily-fee and RPP) and for metered spaces in Zone 2 provide real-time occupancy data to users and to the City Program Manager.

<sup>7</sup> Based on 8 spaces per pay-station on average. Vendor estimates should be obtained to further refine this information before deciding on a final technology. Arup does not prescribe single-space meters over pay-stations other than on a cost-efficiency basis for this study.

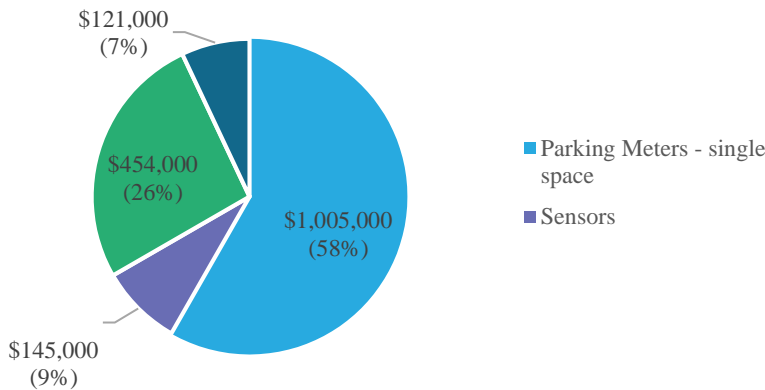


- **Digital back-end, data processing and software** to manage data stream created by the parking meters and block sensors, through external vendor for data processing occupancy and collection data.

We assume the technology is deployed in a single stage in Year 1 of the Parking Management Program.

One-time capital costs for the Scenario 1 package are estimated at \$1.7 million (2020 prices) and include the installation of parking meters, sensors, signage and enforcement costs (ALPR-equipped vehicles and hand-held devices).

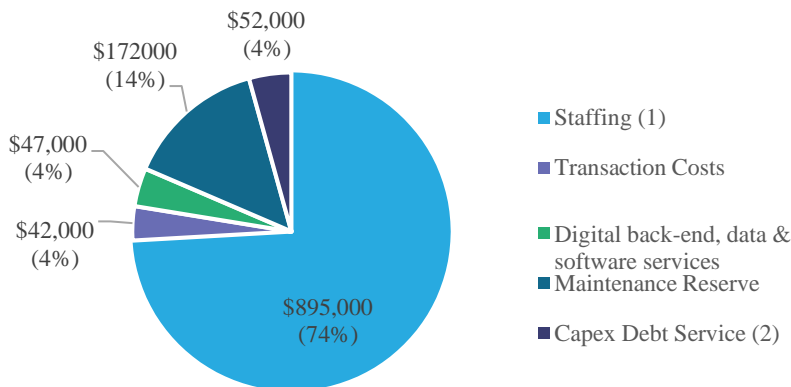
**Figure 6: Capital Costs (2020 prices)**



### 3.2.4 Operating & maintenance costs

Annual operating expenditure is estimated at \$1.2 million (2020 prices) and includes: staffing, transaction, digital infrastructure costs, maintenance reserve and financial costs. Staffing costs, specifically enforcement, are the largest expenditure for the program and could potentially be reduced by outsourcing to a third-party vendor.

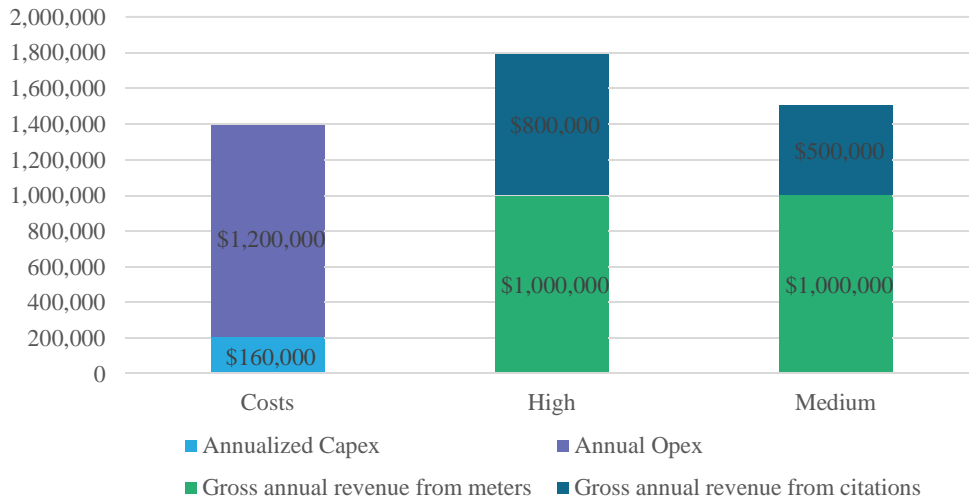
**Figure 7: Annual Operating Expenditure**



### 3.2.5 Revenue and Financial Viability

We estimate gross annual revenue of between \$1.3 and \$1.8 million for Scenario 1 including revenue from both meters and citations. **Figure 7** shows a range of estimated annual revenue, with medium and high citation revenue, and assuming meter prices of \$12 in Zone 1 and \$5 in Zone 2.

**Figure 7: Scenario 1 Annual cost and Revenue (based on high / medium citation revenue)**

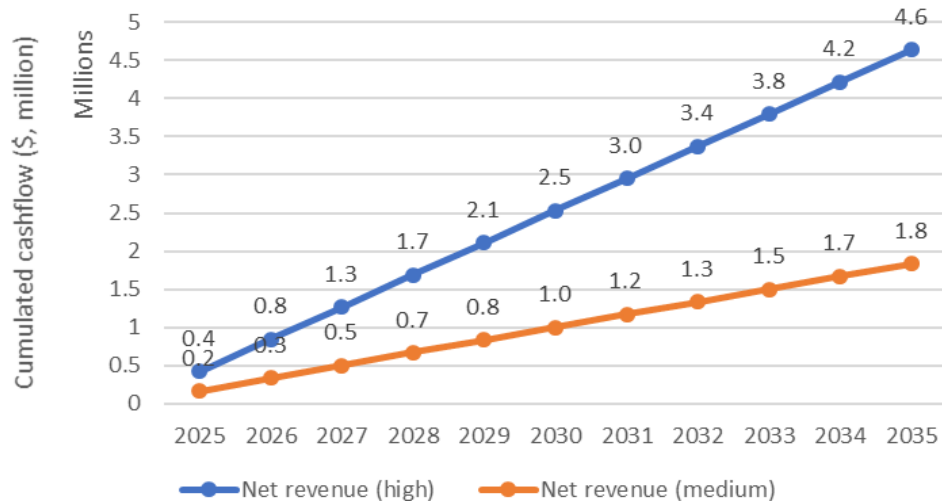


Citation revenue plays an important role in the program’s financial viability to net out enforcement expenditures and generate surplus revenue. As shown in Figure 7, this revenue stream could represent upwards of 30-45% of total annual gross revenue.

This scenario is financially viable and could generate approximately \$200-500,000 in surplus revenue annually (2020 prices, undiscounted), and up to \$4.6 million in gross revenue over 10 years.

Figure 8 shows the projected range of cumulative gross revenue under two scenarios (medium and high).

**Figure 8: Cumulative cashflow projections 2025-2035 under two gross revenue scenarios**



### 3.2.6 Benchmarking

This analysis finds the financial outcomes of Scenario 1 to be in the same order of magnitude for costs, revenue and surplus relative to the scale of the Walnut Creek and Berkeley on-street parking programs.

**Table 2: El Cerrito costs and revenue outcomes compared to benchmarks (\$ / space per year)**

	El Cerrito Scenario 1	Walnut Creek	Berkeley
Gross revenue (from metered spaces)	\$ 3,600	\$ 4,600	\$ 4,300
Collection revenue	\$ 2,000	\$ 2,600	\$ 2,700
Citation revenue	\$ 1,600	\$ 2,000	\$ 1,600
Operating expenditure	\$ 1,100 <sup>1</sup>	\$ 1,900 <sup>2</sup>	n/a
Annualized capital cost	\$ 160	n/a	n/a
Net revenue (surplus)	\$ 440	\$ 430 <sup>3</sup>	n/a

1. Includes metered and unmetered spaces in Parking Management Area (total 1,060)

2. Includes operating and maintenance costs for garages and on-street spaces

3. Walnut Creek surplus includes ~\$1 million in Downtown Enhancement Funds and ~\$300 million budgeted surplus FY21, ratio calculated on full program including on-street and garages spaces (total 3,000).

Lower revenue streams for El Cerrito can be explained by the lower rates and turnover at El Cerrito (where most people will park all day) and lower weekend demand compared to Walnut Creek or Berkeley (where there is a greater demand for short-term parking and significant demand on weekends).

## 4 Recommendations and Next Steps

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This analysis finds that a parking management program may be financially viable for El Cerrito Plaza under certain conditions. The three case studies offer lessons from existing parking management systems, including the value of data analytic and enforcement technologies, as well as extensive public outreach. Aurora in particular indicates the risk that parking demand could be less than projected. This section outlines recommendations as well additional consideration and suggested next steps.

### 4.1 Recommendations

Based on findings from the feasibility study and case study research, Arup recommends further examination of a potential parking management program that considers the policy and program features listed below. In the two case studies of cities introducing new or significantly overhauled parking management programs (Walnut Creek and Aurora), setting a clear vision and goals, with inclusive input from residents and businesses, was key. As seen in the case studies and feasibility analysis, investments in technology assets may streamline operations, positively affect the bottom line, and provide hard data for monitoring the program and inform future adjustments.

Our specific recommendations for El Cerrito include:

- Continue analysing and refining options for a parking management program for the residential streets around El Cerrito Plaza station. This will help manage the impact of reduced off-street BART parking when the TOD comes online, while enabling the city to make progress towards its other goals. Section 4.3 (‘Next Steps’) suggests different scenarios the City and BART may wish to explore.
- Design for multiple iterations of the system through feedback collection and regular review. This may include regular, shorter-term adjustments of pricing or time limits, and a longer-term evaluation of the extent of the parking management area and policies, including the residential parking permit program. Writing parking management policy to allow for adjustments – ideally, by vesting City staff with price/time limit adjustment authority – is a key component of designing for iteration.
- Invest in digital technology, which can help structure policy decisions and public communication. Sensors and data analytics support data-driven policy-making and public outreach. Walnut Creek has had great success with block sensors, while other, lower-cost options such as analysis of ALPR data can provide valuable insights relative to traditional monitoring methods (such as annual parking counts conducted manually).
- A clearly defined vision and associated goals, can guide policymaking, public outreach efforts, and program review. For example, Walnut Creek wanted to “make parking easier” for shoppers in their downtown, so set a goal of “85% occupancy to maximize turnover/ease of finding parking.”

- Enforcement and citations can comprise 30-45% of gross revenue or more, with proper management of education and outreach. Enforcement revenue is essential in achieving a viable program, as metered revenue alone will not cover program costs.
- Consider making special permits available to school employees/affiliates to park in RPP spaces near the schools. While additional research is warranted, it appears that these users could easily be accommodated in the RPP blocks adjacent to the schools, which are outside the ¼ mile radius of the TOD and therefore not subject to high demand.

## 4.2 Additional Considerations and Risks

**BART Ridership:** Since the global spread of Covid-19 and the series of stay-at-home orders in effect in the Bay Area since March 2020, BART’s daily ridership consistently falls around 80%-90% below normal. Although vaccine distribution is underway, long-term shifts in travel behavior (and especially commute patterns) remain unknown. Post-pandemic travel patterns may vary greatly from pre-pandemic patterns. This analysis assumes full recovery, and future growth, of BART ridership by 2035. This may be overly optimistic, and future demand for BART – and therefore BART parking – at El Cerrito Plaza could remain lower.

**Low number of meters in Zone 2:** In this analysis, the number of meters in Zone 2 is deliberately low – calibrated to meet projected demand and to keep capital and operating costs low – but it may create an incentive for people to park slightly further, just outside Zone 2, to avoid paying for parking. This may inadvertently create pockets of high parking demand in residential areas just outside the Zone 2 boundary. To avoid this, the City could increase the number of meters in Zone 2, but that would increase capital and operating costs and may not be justified from a revenue perspective. Alternatively, the City could expand RPP enforcement just outside the periphery of Zone 2.

**Consider including other parking management areas:** Some of the startup and ongoing costs, such as hiring a full-time Parking Manager and creating a citywide parking management ordinance, are fixed costs regardless of the size of the parking management program. If the City decides to proceed with a parking management program for the area around El Cerrito Plaza BART, it may benefit from exploring current/future parking management needs across the city (e.g., in the neighborhood surrounding del Norte BART station or the Fairmount/San Pablo commercial center). If additional parking management beyond El Cerrito Plaza station is warranted, the revenue generated in those areas may help justify the costs of creating and staffing a new parking program.

**Benefits and risks of phased implementation:** Phased implementation may reduce upfront costs, provide a longer period for education about the parking program, and allow for preliminary feedback to inform expansion. Beginning with Zone 1 and expanding to Zone 2 may be an attractive approach. However, this analysis finds that a program limited to Zone 1 and under the existing RPP structure would not be financially viable on its own. More analysis is needed to determine if a phased approach could work.

**Short-term parking:** El Cerrito’s vision for a thriving commercial district centered around Fairmount and San Pablo Ave will be given a tremendous boost by the TOD at BART with the introduction of

600-800 potential new households nearby with around 1,200 to 2,000 new residents. Our analysis finds that short-term, retail-oriented parking demand can mostly be accommodated within the current RPP (which allows non-residents to park free for up to 4 hours). However, much depends on the future growth of the area. As retail and dining tend to attract visitors on evenings and weekends, short-term parking demand may be complementary with BART parking. The parking program should be designed with this possibility in mind, so that some spaces can be made available for both short- and long-term parking as conditions change.

### 4.3 Next steps

Additional feasibility testing can be done using the Scenario 1 analytical model to test alternative assumptions or sensitivity to parameter changes.

This additional testing can help determine how ‘resilient’ a parking management program would be under different circumstances. For example, if BART includes more or less replacement parking than the 250 spaces considered in Scenario 1, if BART ridership recovers from the drop due to Covid-19 more slowly than expected, or if BART parkers are only willing to pay \$9 per day instead of \$12, would the parking management program still be viable?

New scenarios may consider:

- A phased deployment; to have a first phase to cover Zone 1 for instance, with an extension into Zone 2 as a second phase.
- An ‘infrastructure-free’ option that eliminates physical meters and/or pay stations and relies fully on online/mobile payments.
- An evolution of the RPP zones, policies and/or pricing to better manage demand for residential and short-term parking.
- Inclusion of short-term parking pricing and revenue within portions of the parking management area<sup>8</sup>.

In parallel, sensitivity testing can be performed using different values for some of the key inputs, with minimal changes to the structure of Scenario 1. We suggest testing different values for the following inputs to analyze how they impact overall outcome:

- Start / end of evaluation period, timing of the TOD and new parking program
- BART ridership forecast
- Pricing of Zone 1 and Zone 2, and associated behavioral impact (pricing – mode shift elasticity)
- Technology supply (type and /or inventory)
- Outsourcing staffing costs

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<sup>8</sup> This would require a review of available data to determine whether this analysis is feasible with existing data.

- Capital cost annualization
- Citation revenue

Future work planned by Arup and BART will expand upon Scenario 1 as presented in this report.