Parking Technology Roadmap

City of Manhattan Beach, California

Prepared by
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January 2, 2025

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Introduction

Purpose

This Parking Technology Roadmap (Roadmap) was developed by Dixon Resources Unlimited (DIXON) for the City of Manhattan Beach, CA (City), to assess the City's current parking technologies and provide recommendations for the procurement and implementation of new technology. The Roadmap includes the following elements in the City's parking program:

- On-street Parking Payment Technology
- Applicable Based Payment Technology
- Text-to-pay Payment Technology
- License Plate Recognition (LPR) Technology
- Non-technology strategies to support the program

This Roadmap aims to provide the City with guidance on building a cohesive and effective parking technology ecosystem, with the goal of improving efficiency and futureproofing the City's parking program. The recommendations for parking technology included in this Roadmap may be used by City staff to help guide and inform the release of Request for Proposals (RFP) of various technologies targeted for approval by the City Council in February 2025.

About DIXON

DIXON, a California-based parking and transportation management consulting firm, brings over 30 years of extensive knowledge and hands-on experience. Founded by Julie Dixon, a seasoned professional in the field, DIXON is committed to directly supporting municipal parking programs. As 'Parking Coaches,' the team offers best-in-class municipal parking solutions across a broad spectrum, including operational audits, policy development, financial projections, community engagement, data collection, parking studies, citation and permit management, solicitations, and technology and services procurement support. The team's industry awareness and familiarity with parking technology and current developments have made DIXON a sought-after advisor for parking programs nationally and globally.

The findings and recommendations outlined in this Plan are guided by working experience supporting other agencies nationwide. DIXON's unique specialization in parking management and involvement in the industry ensures that the expertise applied is current, relevant, and finetuned based on real-world results. The Plan draws on existing best practices and the latest industry feedback and is tailored to suit the City based on expert observation and input from City staff.

Background

The City currently operates approximately 1,275 single-space parking meters and 12 multi-space pay stations. The single-space meters are equipped with occupancy sensing technology for collecting occupancy data and resetting purchased time once a vehicle departs the space. The City's Public Works Department manages general parking management and payment technology, the Finance Department completes all financial reconciliations and parking

enforcement is conducted by the Police Department. Mobile License Plate Recognition (LPR) is installed on three vehicles that are utilized to enforce parking payments.

Table 1. Current Technologies

Technology	Provider	Use
Single-space parking meter	IPS Group, Inc.	On and off-street parking payments
Single-space sensor	IPS Group, Inc.	On and off-street occupancy detection
Multi-space parking meter	IPS Group, Inc.	Off-street parking payments
LPR	Motorola/Vigilant	Parking enforcement
Citation Issuance and Collection	Turbo Data Systems	Parking payment enforcement and citation issuance

This Roadmap will specifically focus on replacing parking payment technologies and assessing the supporting solutions. The current parking payment technology is ageing, resulting in increasing costs to maintain the equipment, including the necessary replacement parts and person-hours required to keep the system operating. Additionally, the City has experienced ongoing technical and service provider issues, increasing costs and customer frustration.

Parking payment technology is currently deployed in the following quantities for each location.

Table 2. Payment Technology Locations

Technology	Single-space Meters	Pay Stations
On-street Parking	541	0
Metlox Garage	0	12
Civic Center Upper	0	0
Civic Center Lower	96	0
Lower Pier Lots	68	0
Upper Pier Lots	50	0
Lot 1	45	0
Lot 2	66	0
Lot 3 (under construction)	0	0
Lot 4	64	0
Civic Center South	10	0
Lot 6	23	0
Lot 7	17	0
Lot 8	0	0
26th and Ocean Lot	68	0
El Porto Lot	227	0
TOTALS	1,275	12

Technology Roadmap

The following section provides recommendations for replacing or enhancing the existing technology as well as non-technology implications for the program.

Pay Station Technology

The City currently utilizes a mix of single-space parking meters and multi-space pay stations for on-street and off-street parking payments. To promote an easy and customer-friendly parking experience, the City should select a new singular technology in the form of state-of-the-art pay stations with a pay-by-plate enforcement method. This specific format is the latest industry standard for efficiency and function.

This technology has proven more cost-effective and customer-friendly over the long term. Savings are found through less on-street infrastructure, implementation costs, replacement parts, and maintenance service. Most vendors now provide ongoing services for a flat per-pay station fee, removing any per-transaction fees which add to the savings. Additional services are now available on pay stations, including customized branding, information screens, validations, alternative payment listings, and more. These services are found to not only enhance the customer's experience but also support the goals of local businesses and other stakeholders.

Pay stations may be configured to accept payment types that support the changing payment landscape. The majority of transactions will be a bank card purchase, however access to coin payment is still required and also supports a customer friendly approach. It is recommended that the City consider a mix of bank card only and bank card plus coin accepting pay stations. Reducing the number of coin-accepting pay stations provides an operational and fiscal benefit by requiring less hardware maintenance and coin collecting and counting.

For the purposes of this plan, we have recommended a 50/50 split between pay station configurations. However, the actual number will need to be determined with the following considerations:

- **Parking Lots or Garages:** At least one coin accepting pay station will be needed in each parking lot or garage.
- **On-Street**: A customer should not be required to walk further than one block to make a coin payment. The City should make an effort to place the coin accepting pay station in the same location on each block.
- **Signs or Postings:** A sign or posting on or near a bank card only pay station should list the nearest coin accepting pay station.

The Pay Station systems will be utilized with the other technologies recommended in this report to create a cohesive and efficient parking technology program. Pay by plate supports an enhanced enforcement program through integrations that allow the LPR system to scan license plates to identify noncompliance. These integrations are industry standard and should be of no additional cost to the City.

To install new pay stations, the City should consider the following general guidelines for equipment placement.

- **Parallel Parking Block –** One pay station shall service 8 to 10 parallel parking stalls on a block face. The pay station should be located nearest to the center of the block.
- **Angled/Perpendicular Parking Block –** One pay station shall service 15 to 20 angled or perpendicular stalls located on a block face. The pay station should be located nearest to the center of the block.
- **Additional Pay Station per Block –** Additional pay stations may be added to a block face with more than 10 parallel or 20 angled stalls. The additional pay station(s) will provide service for every additional group of 2 to 10 parallel parking stalls or 2 to 20 angled/perpendicular stalls on a block face. Each pay station should be located nearest to the center of each group of stalls.
- **Corner Placement –** Corner placement of pay stations may be considered depending on the storefront makeup, block length, and pedestrian traffic flow.
- **Street Crossing –** A customer shall not have to cross traffic to access a pay station.

The following is an approximate count of pay stations the City will need to procure. It is also recommended to purchase an additional spare stock. These pay stations can be utilized to fill in any additional locations determined during implementation and as spare parts for ongoing operations. Purchasing additional pay stations in bulk is generally more cost-effective than individual or spare parts purchases.

During the procurement process, DIXON can work with the City to identify and map each pay station's specific location to refine the total number required. The following is the approximate total number of pay stations that will be needed.

Table 3. Pay Station Count

Location	Number of Stalls	Approximate Number of Pay Station Needed
On Street Parking	541	68
Metlox Garage	450	10
Civic Center Upper	0	0 (free lot)
Civic Center Lower	96	4
Lower Pier Lots	68	4
Upper Pier Lots	50	4
Lot 1	45	3
Lot 2	66	4
Lot 3 (under construction)	Approximately 70	4
Lot 4	64	4
Civic Center South	10	1
Lot 6	23	2
Lot 7	17	2
Lot 8	0	0 (free lot)
26th and Ocean Lot	68	4
El Porto Lot	227	10
Spare Stock	0	16
	1,795	**140**

The tasks and components associated with pay station implementation include:

- ✓ Pay Station solution procurement (City)
- ✓ Pay station hardware (Vendor)
- ✓ Pay station software and back-office configuration (Vendor)
- ✓ Project Management (City and/or Consultant)
- ✓ Pay station installation (City or Vendor)
- ✓ Removal of existing meters and poles (City or Vendor)
- ✓ Ongoing services (Vendor)
- ✓ Pay station maintenance (City)

Mobile Payment Applications

The industry has moved to an increasing digital technology ecosystem, which includes mobile payment application (App) solutions. Cities across the globe have implemented app-based payments to provide an efficient way to pay via a smartphone, including surrounding municipalities such as Santa Monica, Los Angeles, Beverly Hills, and Seal Beach. Using an app reduced the reliance on hardware, thus allowing the city to purchase fewer pay stations by supplementing this additional payment option. Apps are provided as a service from a vendor, requiring no City technology infrastructure and can support enhanced functionality such as validations.

The tasks and components associated with App implementation include:

- ✓ App Solution Procurement (City)
- ✓ App and back-office configuration (Vendor)
- ✓ Project Management (City and/or Consultant)
- ✓ Sign and sticker manufacturing (City or Vendor)
- ✓ Sign and sticker installation (City or Vendor)
- ✓ Ongoing Services and Transaction fee (City may pay this fee or pass along to the customer)
- ✓ Sign and sticker maintenance (City)

QR Code Scams

As the City moves towards implementing new technologies, it is imperative to consider QR code scamming which has become all too common, especially in a payment environment. The scam involves unauthorized individuals affixing QR codes to parking meters, pay stations and signage. Once a customer scans the QR code, they are guided to an app or site instructing them to enter their information. If the customer continues through the process, their information is captured and used for fraudulent activity.

It is recommended for the City not to use any physical QR codes for payment or marketing material. Additionally, advertising that the City does not use QR codes notifies customers not to use any QR codes they might find. As part of ongoing maintenance procedures, the City should include a regular physical check of assets to ensure no QR codes have been affixed or remove any that have been.

Mobile payment and related signage may supplement or replace a pay station installation, especially on block faces with 11 to 17 parallel parking stalls or 16 to 39 angled/perpendicular stalls. In this case, easily identifiable signage should be placed along the block face every 2 to 4 parallel parking stalls or 4 to 6 angles/perpendicular parking stalls.

It is standard practice for the vendor to provide the first round of signs and stickers at no cost to the City. The City would be responsible for installation of the signs and purchasing any subsequent signs or stickers. Alternatively, the City could request vendor pricing for sign installation.

To procure an App solution, DIXON recommends that the City include App services as an option along with pay stations in a singular RFP.

Text-to-Pay

Along with the mobile payment application, most vendors also provide a text-to-pay option. This functionality allows customers to pay by texting a listed number rather than downloading an app. Using text-to-pay further reduces the reliance on hardware and provides even more options for convenient payment and compliance.

The technology follows the same processes and procedures as app implementation. No City technology or hardware infrastructure is required beyond placing signs in the appropriate locations.

To procure a text-to-pay solution, DIXON recommends that the City include this as an option along with the pay station and the mobile app in a singular RFP.

Sensors

The City will also remove the parking occupancy sensors by removing the IPS single-space meters. It is recommended that sensors are entirely removed from the City's operation. The marketed benefits of the technology still need to be proven and made more affordable in terms of installation and ongoing costs. The two major benefits of sensors can be replaced by new pay station technology.

This benefit of occupancy data can be replaced with mobile LPR cameras and implementation of the DIXON Data Suite® (more information can be found in the Data Analysis and Reporting section). The benefit of removing (resetting) the remaining time at the meter when a vehicle departs is replaced with pay station technology. With pay stations, revenue is secured by the vehicle (pay by plate), thus negating the need for any sensor reset functionally. As an added benefit to the customer, the City may consider allowing a customer to take their time with them, meaning they can move to a different parking spot within a specific zone to utilize their remaining purchased time.

License Plate Recognition (LPR)

Currently, the City utilizes LPR installed on three enforcement vehicles. The systems are used to query historical data and detect stolen vehicles. With the transition to a fully pay-by-plate pay station-based system, enforcement operations will need to be adjusted, providing more efficiency and cost-effectiveness. The LPR system will be integrated with the pay station, mobile payment, and text-to-pay vendor, allowing transaction data to be utilized for enforcement.

Additionally, the system can be used for digital chalking, time limit enforcement, stolen vehicle detection, permit enforcement, and data collection.

For most enforcement activities, an officer will drive the vehicle equipped with LPR through the enforcement areas, and the technology will assess potential violations. An additional integration may be possible between the LPR system and the citation issuance system, where the information of the noncompliant vehicle is transferred to the issuance handheld, thus speeding up the issuance process. Fixed LPR, where stationary cameras are placed at ingress and egress points of parking lots or garages, can also be considered to support enforcement and occupancy data collection.

To implement the new payment technology, the City should assess the functionality and quantity of vehicles with LPR to ensure they are adequate for the new program. Additional LPR units and functionality will be required as enforcement officers will rely heavily on the technology to assess compliance versus the current process of manually checking each single space parking meter. Adjustments to the current enforcement workflow and responsibilities will be required to support the new technology.

The City should conduct this procurement and implementation along the same timeline as the pay station technology due to its necessary involvement with the overall parking program. However, a separate solicitation is recommended. The tasks and components associated with LPR implementation include:

- ✓ Assess the current and desired quantity of LPR units (City and/or Consultant)
- ✓ LPR solution procurement (City)
- ✓ LPR hardware, configuration and installation (Vendor)
- ✓ Project Management (City and/or Consultant)
- ✓ Adjust enforcement workflow and responsibilities (City and/or Consultant)
- ✓ Ongoing services (Vendor)
- ✓ LPR maintenance (City)

Data Collection and Analysis

Ongoing data collection and evaluation will be essential to ensuring the parking program adapts to fit the community's needs best. Data-driven decisions will enhance the success of parking management strategies, policies, and regulations by allowing the City to remain flexible in its approach. DIXON recommends that the City consider using LPR in conjunction with the DIXON Data Suite®. This solution is an efficient and cost-effective way to capture ongoing parking data collected during regular parking enforcement operations.

Data is automatically collected during patrols and automatically ingested into the DIXON Data Suite® through an integration with the LPR system. Data is processed and the City is provided key parking metrics such as the level of parking congestion, turnover rates, and repeat parking trends, which can be used to inform data-driven parking policies and regulations in the future. This tool also assists in enforcement management by providing optimized enforcement routes and the ability to review enforcement efficiency and coverage. The DIXON Data Suite® can also support integrating transaction and citation data from the City's chosen vendors that provide a comprehensive view of the entire parking program.

Digital Parking Occupancy Signs

The City may consider using Digital Parking Occupancy Signs (Digital Signs) to improve wayfinding to parking garages and lots. As general practice for municipal parking operations, on-street parking is optimized for short term visits to business, restaurants, and services located along the blocks of the available parking. Whereas, off-street parking is optimized for longer-term stays. Digital Signs are utilized to indicate available off-street parking to customers, encouraging them to use these facilities rather than circling blocks in search of on-street parking.

The Digital Sign technology includes the following components:

- **Cameras:** Cameras are installed at parking facility entry and exits points to collect occupancy data.
- **Facility Signs**: Digital Signs are placed at the entry points to provide availability information.
- **Remote Signs:** Digital Signs are deployed in high visibility locations to direct customers to available off-street parking.
- **Infrastructure:** Power and communications infrastructure must be installed as part of the Digital Sign solution.
- **Management System:** A cloud hosted management will be provided for system management and reporting.

This solution would be best served at the following City facilities:

- Metlox Garage
- Civic Center Garage
- Lot 4
- Pier Lots
- El Porto Lot
- 26th and Ocean Lot

The City may consider conducting this procurement and implementation along the same timeline as the other technology, however a separate solicitation for this specific solution is recommended, allowing for selection for best in class of each. Should more time be needed, conducting the solicitation after the pay station procurement is recommended. The tasks and components associated with Digital Sign implementation include:

- ✓ Digital Sign procurement (City)
- ✓ Digital Sign hardware (Vendor)
- ✓ Digital Sign software and back-office configuration (Vendor)
- ✓ Project Management (City and/or Consultant)
- ✓ Digital Sign installation (Vendor provided)
- ✓ Ongoing services (Vendor)
- ✓ Digital Sign maintenance (City)

Signs & Branding

Consistent and clear signs are critical to creating a customer-friendly experience while encouraging compliance. With the adoption of a pay station-only infrastructure complemented by App and text-to-pay services, the City will need to assess existing signage and create a plan to install additional signs addressing the new program features. There are three main types of signs to consider:

Figure 1. Manhattan Beach Regulatory Signs

- **Regulatory –** These signs are required by law and should follow the Manual on Uniform Traffic Control Devices (MUTCD) guidelines and California Vehicle Code (CVC). Information includes hours of enforcement, time limits, no parking and more. Currently, regulatory signs are installed on single-space meter poles and individual sign poles throughout the City.
- **Informational –** Informational signs, while not currently existing, will need to be added to accommodate the new payment platforms. Information should include where/how to pay for parking (app, text to pay, and pay station) and other relevant parking information and may be branded to the look and feel of Manhattan Beach.
- **Pay Station –** A pay station should be accompanied by signs identifying the location as a place to pay. These signs and stickers placed on the pay station may also include alternative payment methods and may be branded for the City.

As part of the signage assessment and plan, the City should consider adopting a unified parking brand which improves the overall customer experience and on-street aesthetic by clearly designating public parking information. The branding can also be utilized on all public parking outreach materials for consistency. A parking brand is successful when it evokes a memorable and positive parking experience, drawing repeat visitors.

The following is an example of a branding package created for the City of Paso Robles, CA.

Figure 2. Paso Robles Branding Package

The tasks and components associated with signage assessment and planning include:

- ✓ Assessment of current sign package (City and/or Consultant)
- ✓ Plan for new sign package (City and/or Consultant)
- ✓ Branding and designing of signs and marketing material (City and/or Consultant)
- ✓ Manufacturing of signs and marketing materials (City and/or vendor)
- ✓ Installation of signs and necessary poles (City and/or vendor)
- ✓ Maintenance of signs and poles (City)

Demonstrations

As part of the procurement process, DIXON recommends that the City conduct interviews and demonstrations with vendors who meet the minimum qualifications. This should include requiring the vendor to bring their technology and provide a demonstration during the interview. The evaluation committee should take this opportunity to experience the technology as a customer and evaluate the functionality, collection process, and ease of maintenance.

Technology Vendor Contracting

As the City procures new technology partners, it is recommended that the following components be included in each contract based on industry best practices.

- **Service Level Agreements (SLA) -** The City should include SLAs as part of each agreement, which are used to measure the vendor's performance during the term. Recommended SLAs are being provided to the City as part of the scope of work for each technology.
- **Data and Security Requirements –** The City should include specifications for data and security requirements in each agreement, which ensure compliance with related laws and security and proper ownership of the City's data. Recommended requirements have been provided to the City as part of the scope of work for each technology.

- **Data Integration –** The City should introduce and maintain data integration standards for all vendor agreements and contracts to establish operational consistency and future-proof the parking technology system. Incorporating these standards into any future contracts with technology vendors can allow the City to maintain authority in the data being collected and used by the vendor, ensure compliance with the City's security and system requirements, streamline integration processes with other technology systems, and enable smoother transitions between vendors if the City chooses to terminate a vendor for any reason.
- **Contract Term –** The City should consider the length of each contract based on the technology provided. A base five (5) year term for most agreements is a generally accepted standard. Optional one (1) year extensions up to ten (10) years total may also be included, allowing the City flexibility to maintain an advantageous partnership. For technologies that require little capital to implement, such as mobile payments, a shorter base term of three (3) years with optional one (1) year extensions up to ten (10) years total is recommended.

Maintenance & Operations

The change of parking technology will have an impact on the maintenance and operation of the parking system. The City should prepare for these implications during the procurement process. The following are important aspects to consider:

- **Collections:** Changing from single space meter coin collection to pay station coin collection is of great benefit to the City as the process will require less person hours and equipment. Single space meters are generally collected on a specific route at regular intervals with collection canisters. Pay stations include a much larger coin vault allowing for less frequent collections and simply require a quick swap of an empty canister for a full one. As an initial standard, it should be expected to collect each coin accepting pay station every 2 – 3 weeks completed in dual custody. Thus, a new Collections Standard Operating Procedure will need to be created and implemented.
- **Maintenance:** With the reduction of infrastructure, less person hours will also be needed for maintenance. In general, the City can expect fewer field response visits and less spare parts inventory to manage. All pay station vendors provide a back-office maintenance module that will allow maintenance staff to actively monitor system health and receive notifications of outages requiring attention. At a minimum, each pay station should receive preventative maintenance every 90 days. The City will need to adjust the Maintenance Standard Operating Procedures to accommodate the new technology.
- **Signs:** With the addition of digital and analog signs to support the new technology, their upkeep is important. Clear and available communication to customers is critical to enforcement operations and in maintaining a positive customer experience. The City will need to ensure sign observation and maintenance is included in the scope of maintenance staff work. At a minimum, signs should be observed every 6 months.

The City currently employees two technicians that manage meter maintenance and collections. In comparison to similar parking meter operations, it would be expected to have three to four technicians to be responsible for the current workload while maintaining a system to industry standard level. With the new technology implementation, the City should consider the addition

of 1 part-time (or full time) employee, for a total of three technicians. This individual should be hired prior to implementation in order to receive training from the vendors as is standard for this type of procurement.

The following can be utilized to make an assessment of the quantity of technicians required:

- **Basic Responsibilities:** These are the standard responsibilities of parking operations technicians which include repair, replacement, preventative maintenance, revenue collections, and spare parts management.
- **Distance:** The time required to move between installed locations impacts the amount of time a technician can actually complete the assigned work.
- **Coverage:** Technicians should be available to address repair work during the majority of the operational hours and days. As an initial standard, technicians should be available to address a necessary repair within 1 operating day.
- **Collection Frequency:** Starting with every 2 – 3 weeks for each pay station, this may be adjusted based on actual usage once the program is launched.
- **Other responsibilities:** This includes any additional assignments required by the City, such as sign observation and maintenance, responding to adjudication or customer reports, or administrative work.

Following is the estimated number of technician hours per month by responsibility.

Table 4. Estimated Technician Hours

Responsibility	Quantity	Time Allocation	Total Time	Detail
Pay Station Collections	70	.75	52.5	Collections occurring 1.5 times/month/pay station
Pay Station Repair	20	1	20	Estimated 20 repairs per month
Preventative Maintenance	47	.5	23.5	Preventative Maintenance to occur at 47 pay stations each month.
Spare Parts Management	15	1	15	Estimated time spent managing inventory
Analog Sign Maintenance	20	1	20	Estimated time spent observing or repairing signs
Digital Sign Maintenance	15	1	15	Estimated time spent maintaining Digital Parking Occupancy Sign system
Administrative	84	1	84	Estimated time for administrative work
Other	84	1	84	Estimated time spent on other responsibilities
Travel Time	84	1.5	126	Estimated time for travel between locations
		TOTAL	**440**	
			÷160	Hour/month/technician
			=**2.75**	Required # of employees

Finally, the City should also consider what type of warranty support is required from the technology vendors. Industry standard is a 1-year repair or replace parts warranty, where the City will ship (City cost) inoperable parts to the vendor for repair or replacement (vendor cost). Vendors will offer an extended warranty to continue the same warranty service for the useful life of the equipment. It is recommended that City maintains the extended warranties as long as possible. This will reduce the variable costs of replacement parts and staff time required to repair any inoperable parts.

The tasks and components associated with maintenance and operations include:

- ✓ Hire 1 additional technician (City)
- ✓ Adjust Collection Standard Operating Procedure (City and/or Consultant)
- ✓ Adjust Maintenance Standard Operating Procedure (City and/or Consultant)
- ✓ Assign Sign Observation and Repair scope of work to City staff (City)
- ✓ Analyze the collection frequency (City and/or Consultant)
- ✓ Analyze the required number of technicians (City and/or Consultant)
- ✓ Maintain hardware warranty (City)

Technology Procurement Process

DIXON has provided the following tasks and estimated the timeline for procurement and implementation of new technology.

Table 3. Procurement and Implementation Process

Task	Responsibility	Timeframe
Technology Roadmap and Budget Approval	City	April 2025
Specification Development	City and Consultant	May 2025
RFP Release	City	June 2025
RFP Review	City and Consultant	July 2025
Vendor Interviews & Demo	City and Vendor	August 2025
Contract Award & Contracting	City and Vendor	September 2025
Standard Operating Procedure Review	City	September 2025 – March 2026
Manufacturing and Configuration	Vendor	September 2025 – March 2026
Implementation Planning	City	January 2026 – March 2028
Implementation Period	City, Vendor, and Consultant	April – May 2026
Final Acceptance	City	June 2026

Budget

DIXON has provided the following cost estimation for all solutions as part of this Roadmap. The pricing is estimated for procurement in 2025 and is subject to change.

IMPLEMENTATION				
Item	**Subitem**	**Quantity**	**$ per Unit**	**$ per Unit**
Consultant				
	Specification & RFP Development	1	$35,000	$35,000
	Proposal Review	1	$7,000	$7,000
	Contracting Support	1	$7,000	$7,000
	Implementation Support	1	$45,000	$45,000
	Signage Assessment & Plan	1	$15,000	$15,000
	Branding, Sign, & Marketing Support	1	$17,500	$17,500
			Subtotal	$126,500
Pay Station Implementation				
	Pay Stations – bank card only	70	$8,000	$560,000
	Pay Stations – bank card and coin	70	$8,500	$595,000
	Spare Parts	1	$50,000	$50,000
	Configuration	1	$5,000	$5,000
	Project Management	1	$5,000	$5,000
	Installation (vendor-provided)	124	$500	$62,000
	Existing Meter & Pole Removal	1,275	$125	$159,375
			Subtotal	$1,436,375
App Implementation				
	App Implementation	1	$0	$0
Text-to-Pay Implementation				
	Text-to-Pay Implementation	1	$0	$0
Analog Signs				
	Regulatory Signs	500	$35	$17,500
	Information Signs	250	$50	$12,500
	Pay station Signs	124	$50	$6,200
	Poles	875	$100	$87,500
	Installation	875	$150	$131,250
			Subtotal	$254,950
Digital Signs				
	Camera Equipment	23	$3,500	$80,500
	Ingress Signs	13	$5,000	$65,000
	Remote Signs	6	$18,000	$108,000
	Installation	1	$110,000	$110,00
	Infrastructure	1	$225,000	$225,000
			Subtotal	$588,500

LPR				
	LPR System per vehicle	5	$52,000	$260,00
	Implementation	1	$10,000	$10,000
	Installation per vehicle	5	$5,000	$25,000
	5-year warranty	5	$16,000	$80,000
			Subtotal	$375,000
Data Analysis & Reporting				
	DIXON Data Suite® Set Up	1	$25,000	$25,000
Contingency				
	Contingency	1	$180,00	$280,000
			IMPLEMENTATION TOTAL	**$3,086,325**
ONGOING FEES				
Item	**Subitem**	**Quantity**	**Price**	**Annually**
	Pay Station License (per pay station)	140	$85/month	$142,800
	Pay Station Annual Warranty *Starting year 2*	140	$550/year	$77,000
	App Transaction Fee *Can pass fee to customer*	350,000	$.35/transaction	$122,500
	Text-to-Pay Transaction Fee *Can pass fee to customer*	100,000	$.35/transaction	$35,000
	DIXON Data Suite®	1	$2,000/month	$24,000
	LPR Camera Annual Licensing	5	$1,400/year	$7,000
	LPR System Annual Licensing	1	$6,000/year	$6,000
	Digital Sign Annual Fees	1	$60,000/year	$60,000
	Warranty Shipping	1	$1,000	$1,000
			ANNUAL ONGOING FEES TOTAL	**$475,300**

Additional Considerations

DIXON has included the following topics for City consideration. While these do not relate specifically to the Roadmap, they are important aspects of a comprehensive parking program. The City may consider creating more long-term goals, including assessing these items for future enhancement.

- Revenue Collection and Reconciliation
    - The City currently utilizes internal resources for parking meter revenue collection, counting, and reconciliation.
    - Recommendation: When the City moves to a pay station-only system, collections will be less onerous and frequent. The internal staff time for these activities may be repurposed to other responsibilities. The City should consider outsourcing this responsibility to a local bank for safer and more secure cash counting. This should include creating standard operating procedures for the collection and counting process.
- Citation and Permit Management System
    - The City currently utilizes a vendor for citation issuance and management and manually manages a limited number of permits.
    - Recommendation: As new technology is deployed, the City should review the contract with the vendor to ensure it is advantageous and provides the necessary functionality for the future. The current (or future) vendor may also provide a permit management system, creating efficiencies through digital plate-based permits and online features.
- Parking Steering Committee
    - The City currently operates the parking program across multiple departments including Public Work, Finance, and Police.
    - Recommendation: The City should consider creating a Parking Steering committee that incorporates individuals from each department that is involved with parking operations. Additionally, other stakeholders could be included from City management or community organizations. Bringing together and collecting feedback from a focused group creates an approach that brings success through collaboration and eases the challenges of implementing changes.

Summary of Recommendations

The following section summarizes the recommendations for parking technology and supporting initiatives for the City's parking program that were covered in this Roadmap:

Section	Recommendations
Pay Station Technology	• Plan for and procure a pay station-only technology platform, removing all single space meters and poles.
Mobile Payment Application	• Procure a mobile payment application to supplement pay stations and provide this popular payment option for customers.
Text-to-Pay	• Procure a text-to-pay solution to supplement pay stations and provide this popular payment option for customers.
License Plate Recognition (LPR)	• Assess the functionality and quantity of the current LPR cameras. • Procure additional functionality and/or cameras to support the new parking program.
Data Collection and Analysis	• Procure new technology for occupancy detection, data analytics, and reporting.
Digital Parking Occupancy Signs	• Procure new technology for parking garage occupancy and digital signs.
Signage & Branding	• Assess the current signage and branding package. • Design a new parking brand. • Procure and install new regulatory and branded informational signage.
Demonstration	• Conduct vendor demonstration for all technology as part of the procurement process
Vendor Contracting	• Ensure adequate requirements and service level agreements are incorporated into new vendor contracts.
Maintenance & Operations	• Make necessary adjustments to maintenance and operations staffing and procedures.