A Work Project presented as part of the requirements for the Award of a Master's degree in Management from the Nova School of Business and Economics.

ENTERING THE UNITED STATES DYNAMIC PRICING MARKET: STRATEGIC RECOMMENDATIONS FOR A-TO-BE

EMA ESTEVÃES PEREIRA

Work project carried out under the supervision of:

José Miguel Pita

23/01/2026

Abstract

As dynamic pricing emerges in the U.S. tolling industry, A-to-Be must keep up with competition to avoid restricting growth and opportunities in the market. This work project conducts a thorough analysis of internal company operations and external market conditions to identify five key states for optimal brownfield market entry. North Carolina is recommended as the most viable for a low-risk pilot, supported by a go-to-market action plan describing how A-to-Be can build credibility and secure procurements. Financial analysis indicates project viability is sensitive to traffic and revenue conditions and profitability remains positive.

Keywords

Dynamic Pricing, Tolling Systems, Algorithmic Pricing Models, Vendor Landscape, Concession Market, Transparency & Governance, Brownfield Market Entry, Strategic Positioning, Commercial Pipeline, Go-to-Market, Revenue Drivers, Costs Drivers, Projected Cashflows

Table of Contents

0 Introduction (Written by: Raquel Horta Dos Santos)

Over the last years, the mobility landscape has suffered a deep transformation globally, and more evidently in the U.S., mainly due to technological innovations, policy shifts, and also due to the increasing demand for more efficient and sustainable transport systems, leading agencies and road operators to launch new tools to help manage traffic flows, reducing congestion and ensuring financial sustainability.

One of these tools is called dynamic toll pricing. Indeed, it is considered one of the most promising mechanisms for aligning road usage with system capacity. Dynamic toll pricing is a system that adjusts toll rates in real time depending on traffic conditions and environmental goals. Furthermore, it provides a data-driven approach to the optimization of road performance.

This context opens an opportunity for the mobility technology provider within Brisa Group, A-to-be. The company has developed strong capabilities in tolling, back-office systems, and traffic management, and is already present in Europe and the U.S. However, it has not yet implemented a dynamic toll pricing system in the U.S., which limits its competitiveness in this market.

The purpose of this project is to determine how A-to-Be can integrate dynamic toll pricing into its existing technology ecosystems and enter the highly competitive U.S. dynamic pricing market. To support this study, internal documentation, industry research, concession analysis, and several frameworks were used.

1 Mapping A-to-Be's Context & Challenges

This chapter introduces A-to-Be in the tolling industry, giving brief context into the shifting trend towards dynamic pricing for congestion management and the relevance this has on future company opportunities. Subsequently, it frames the research objective for this work project, and details the data methodologies, scope, delimitations, and assumptions used throughout.

1.1 A-to-Be in the Mobility Ecosystem (Written by: Henrique Moura Neto Lírio Galveia)

1.1.1 Background & Context

A-to-Be, a subsidiary of Portugal's Brisa Group, positions itself as a technology provider enabling the transition toward smarter, integrated, and user-focused mobility systems. Initially formed from Brisa's in-house innovation division, the company was formally rebranded as A-to-Be in 2017 to reflect its broader vision of Mobility-as-a-Service (MaaS) beyond traditional tolling. Its mission is to make travel easy, safe, sustainable and gratifying, reflects its evolution from a tolling technology firm to a strategic player in the global intelligent transportation systems (ITS) landscape. With over 30 years of experience A-to-Be leverages Brisa's operational expertise while expanding its own international footprint in both the public and private mobility sectors (Brisa Group n.d.).

A-to-Be's product families span three domains: roadside, back-office, and on-board/mobile technologies. Roadside provides multi-sensor tolling gantries, ANPR cameras, and electronic toll collection (ETC) systems, already deployed on roads such as the Westerschelde Tunnel in the Netherlands and the Pocahontas Parkway in Virginia. These solutions support open-road and free-flow tolling, reducing congestion and eliminating the need for physical toll booths. Its flagship back-office platform, MoveBeyond, consolidates real-time transaction processing, billing, CRM, enforcement, and supports dynamic pricing within a cloud-based, modular

environment. Interfacing with it is LinkBeyond, which facilitates secure communications between roadside infrastructure and core systems. ATLAS, the company's advanced traffic management platform, integrates IoT devices, camera feeds, and V2X data to give operators a 360-degree view of network activity. All systems are vendor-neutral and API-first, designed to interoperate with third-party tools and reduce technology lock-in (A-to-Be n.d.a).

In addition to tolling, A-to-Be's portfolio includes road usage charging (RUC) platforms designed for flexible distance-based billing. These systems gather data via multiple channels, including onboard units (OBUs), plug-in GPS devices, odometer readings, and mobile apps (A-to-Be n.d.a). This versatility allows adaptation to different regional regulations and user needs. The company's experience in U.S.-based RUC pilot programs further demonstrates its capacity to offer scalable solutions for evolving transportation funding models (A-to-Be 2017). Its mobile tolling capabilities also enable frictionless payments via smartphones, a growing demand in digital-first mobility ecosystems.

Geographically, A-to-Be operates in Portugal, Western Europe, and North America (A-to-Be n.d.b). It supplies Via Verde in Portugal and has delivered solutions for toll authorities and infrastructure operators in the U.S. and Canada, including back-office deployments on Colorado's Northwest Parkway and participation in Washington State's RUC pilot (Cordeiro 2021; A-to-Be 2018). In Europe, its recent partnership with Via Verde on the A24/Blankenburg project in the Netherlands highlights its growing role in free-flow tolling systems and cross-border mobility services (Hill 2024; A-to-Be 2023; Hill 2023). Its equipment and platforms also support the Southern Connector (South Carolina) and infrastructure in Poland, demonstrating its growing European penetration (A-to-Be n.d.b).

Strategically, A-to-Be focuses on enabling connected, data-driven mobility through innovation in AI, V2X communications, and GNSS-based tolling. Its platforms support MaaS integration

by offering multi-service billing for tolls, EV charging, public transit, and parking through a single user account (A-to-Be n.d.c). This integrated approach positions the company to serve as a backbone for future urban mobility systems. The company also aligns with global decarbonization efforts. For example, its involvement in the EU-funded GEMINI project underscores its commitment to carbon-neutral mobility and its readiness to serve environmentally conscious infrastructure operators (A-to-Be 2023a; Lillerud 2023).

A-to-Be's evolution reflects global policy and market trends. In the U.S., its RUC and congestion pricing solutions align with state-level shifts toward mileage-based charging (A-to-Be n.d.d). In the EU, its open architecture and digital platforms respond to the European Commission's Green and Digital Mobility Strategy, which promotes interoperable, low-emission, and user-pays transport infrastructure. Through partnerships with firms like Deloitte and participation in research initiatives like C-Roads, 5G-MOBIX, and C-Streets, A-to-Be continues to expand its innovation capacity and international reach (Deloitte 2023; European Commission n.d.). In doing so, it has positioned itself as a scalable, adaptable enabler of future-ready mobility systems that meet both commercial goals and public policy imperatives.

1.2 Problem Statement & Opportunity (Written by: Maria Valentina Arroyave Estupiñan)

Lately, the mobility sector has changed very quickly due to advances in technology, new sustainability goals, and changing travel behaviors. Both private operators and governments are now expected to keep transport systems financially sustainable, while also reducing congestion and emissions. As technologies move forward and fuel revenue declines, new models are emerging; Many use data and pricing to better manage how the roads are used (A-to-Be 2024c; Farias, Zhu and Mardan. 2024; A-to-Be 2025e).

As a result, A-to-Be is at an important turning point. After gaining extensive experience in tolling and smart mobility across Europe and the United States, the company faces the challenge of transforming its strong research and development background into practical innovations (A-to-Be 2025e). One of the most relevant directions for this transformation is dynamic pricing, a system that adjusts toll prices in real time based on traffic and environmental conditions.

However, while A-to-be has the experience and technology needed to implement dynamic pricing, external factors like regulation, client needs, and market competition still make it difficult to move from concept to reality (A-to-Be 2025d).

1.2.1 Key Challenges A-to-Be Face in Today's Mobility Landscape

While A-to-be is well positioned as an innovative mobility technology provider, several challenges complicate its ability to move dynamic pricing from concept to practice (A-to-Be 2025e). In Europe, particularly in Portugal, strict concession contracts and state regulatory frameworks currently make the implementation of dynamic pricing impossible (Farias, Zhu and Mardan 2024). As a result, A-to-Be has had to focus much of its research on simulations or European projects, rather than live deployments (A-to-Be 2025d).

In contrast, in the United States, where regulatory flexibility is greater, A-to Be faces intense competition from well-known players such as Kapsh and Emovis, as well as complex and fragmented procurement processes. To enter these markets requires not only technical credibility but also a proven record of successful pilots and strong local partnerships. This combination of commercial risk and operational barriers makes scaling dynamic pricing challenging for emerging players (A-to-Be 2025d; Farias, Zhu and Mardan. 2024).

Finally, market readiness remains a challenge. Many potential clients express interest in innovation, but risk aversion and limited budgets make it difficult for agencies to move away

from traditional tolling models. This often results in a gap between technological capability and commercial adoption, especially for new solutions like dynamic pricing (A-to-Be 2025d).

1.2.2 Emerging Opportunities from the Current Transformation of the Mobility and Tolling Sector

The mobility sector is moving quickly as agencies and operators respond to new policy goals, financial challenges, and user expectations. In the United States, express lane operators are actively searching for alternatives to declining fuel tax revenue, opening the door for solutions like congestion pricing and distance-based tolling. This transition gives technology providers A-to-Be a real chance to grow as partners for more flexible, data-driven and user-oriented mobility systems (Farias, Zhu and Mardan. 2024; A-to-Be 2025d).

A-to-Be's core platforms like, MoveBeyond, LinkBeyond and ATLAS are already designed to handle real time data, support modular integration, and enable transparent, flexible billing (A-to-Be 2024c). This allows the company to deliver solutions that help both public and private clients test and implement innovative pricing models, such as dynamic or demand-based tolling (A-to-Be 2024c). The capabilities are especially relevant as states look for ways to optimize traffic, reduce congestion, and meet new sustainability targets (A-to-Be 2025e).

There are also further opportunities in A-to-Be´s experience with artificial intelligence, computer vision, and V2X communication. These strengths can help the company move beyond traditional tolling and offer additional services, like traffic management, emissions tracking, and integration with other mobility platforms (MaaS), which are all becoming more important for U.S. agencies and infrastructure operators (A-to-Be 2025d; A-to-Be 2025e).

A-to-Be can strengthen its position as a technology enabler and expand its business in the evolving mobility landscape by building these core capabilities and adapting to new policy trends.

1.2.3 Dynamic Pricing as a Path for Innovation and Expansion

Dynamic pricing offers A-to-Be an opportunity to transform its research capabilities into a concrete innovation, especially in the United States, where interest in flexible, data-driven mobility is growing quickly. As traditional tolling models reach maturity, introducing real-time pricing allows the company to respond directly to changing market demands and position itself at the center of next generation's mobility solutions (A-to-Be 2025d).

A-to-Be's strength in traffic detection, back-office automation, and AI-powered analytics provide a solid base for this transition. By connecting real-time data from its roadside system to the cloud-based MoveBeyond platform, A-to-Be can support variable toll rates that adapt to actual traffic and environmental conditions, making its solutions more responsive and attractive to both public agencies and end user (A-to-Be 2025e).

In markets like the U.S., where there is both openness to pilot projects and greater regulatory flexibility, dynamic pricing is not only a technological step forward but also a strategic move. For A-to-Be, moving into this area could boost its competitiveness, open new revenue opportunities, and reinforce its reputation as a company that drives sustainable and efficient mobility systems (Farias, Zhu and Mardan. 2024).

1.3 Research Aim & Research Questions (Written by: Ema Estevães Pereira)

1.3.1 Research Objective

This work project explores the U.S. dynamic pricing landscape through an in-depth analysis of existing market conditions and internal company operations to inform A-to-Be's path forward. It aims to understand the gaps and constraints hindering A-to-Be's progression in the dynamic pricing sector while identifying areas of opportunity to maximize value creation and position

itself for long-term success. To advance in the market and meet global demands on innovative tolling solutions, A-to-Be seeks to position itself alongside established competitors who currently integrate dynamic pricing in their solutions. The main objective is to examine how A-to-Be can integrate dynamic toll pricing into its existing technology solutions and business model, specifically in the United States market, to optimize traffic flow, support sustainable mobility objectives, and strengthen its market positioning as a mobility solutions provider.

1.3.2 Work Project Structure Rationale

To achieve the overall research objective, this thesis paper aims to answer five key secondary research questions that are explored in depth using key data methodologies and research analysis. The questions are as follows:

1. What is A-to-Be's current solutions portfolio, capabilities, operational processes, and strategic positioning relative to competitors already in the dynamic pricing landscape?
2. What external market and benchmarking insights affect A-to-Be's market entry and positioning strategy?
3. What are the strategic market entry points that exist and how can A-to-Be build credibility, gain references, and obtain legitimacy in the US dynamic pricing market?
4. How can A-to-Be turn the market-entry recommendation into a concrete, actionable plan for implementing and scaling dynamic pricing in the US?
5. What implications can be expected on A-to-Be's revenue, costs, and profitability as a result of implementing dynamic pricing?

These research questions guide the development of this work project from internal and external analysis toward strategic recommendations that translates to an effective implementation plan and financial evaluation.

The research questions correspond accordingly to the structure of this work project from Chapter 2 to Chapter 6. Chapter 2 begins with an understanding of A-to-Be's foundation by assessing its current market position, product portfolio, capabilities, constraints, and strategic readiness, with the goal of conducting a complete internal analysis of A-to-Be company operations. To build on the internal insights gathered, Chapter 3 then provides an external outlook of the dynamic pricing landscape, identifying current concessions and using competitor benchmarking to understand what is being offered and determine market gaps. The findings of these chapters will be used to inform the strategic recommendations in Chapter 4, evaluating regulatory constraints and stakeholder landscape to ultimately determine the strongest market entry points and strategic positioning for A-to-Be's integration of dynamic pricing in the U.S.

Based on the recommendations, Chapter 5 outlines a practical execution plan using a phased roadmap and go-to-market action plan that operationalizes A-to-Be's U.S. market entry. This is further supported by the proposal of KPI metrics and monitoring frameworks to ensure successful launch. To assess the financial viability of the proposed recommendations and implementation plan, Chapter 6 evaluates the expected financial implications of adopting dynamic pricing solutions, looking at revenue projections and expenditures, and conducting a sensitivity and risk analysis to determine how profitability may change under different pricing scenarios and behavioral responses by drivers. To conclude this work project, Chapter 7 synthesizes key findings, reinforcing how the proposed recommendations align with A-to-Be's overall vision, and the expected impact from the integration of a dynamic pricing solution.

1.4 Methodology & Data Sources (Written by: Beatriz Isabel Martins Gonçalves)

1.4.1 Data Sources

The research approach adopted in this study combined both quantitative and qualitative methods to ensure a comprehensive understanding of the topic. The quantitative component relied on A-to-Be's internal materials, including corporate documents, reports, and studies,

which provided measurable insights into the company's operations and performance. Complementing this, the qualitative component involved a series of interviews with A-to-Be employees specializing in Sales, Marketing, Research & Innovation, Project Management and Development. These interviews offered valuable perspectives on the company's strategic priorities, operational challenges, and innovation processes.

Given the specific and applied nature of this research topic, a traditional literature review was not conducted in the conventional sense. Instead, the study was grounded primarily on company documentation, internal reports and industry studies directly related to the subject matter. These sources provided detailed insights into the operational context, technologies, and strategic framework relevant to A-to-Be.

Additionally, academic work addressing similar themes, including a previous thesis, developed by Claudio Lombardi, on the implementation of dynamic pricing in Portugal A5 highway, was used to support and contextualize the research. This approach ensured that the theoretical foundations and practical implications remained closely aligned with the reality of the company and the industry, allowing a focused and evidence-based examination of the topic.

At the outset of the research, certain obstacles emerged due to lack of initial alignment with A-to-Be. Difficulties in fully understanding the company's organizational structure, activities and core challenge resulted in delays in data collection and analysis. Consequently, several alignment meetings occurred to clarify objectives, refine the scope, and establish a shared understanding, thereby ensuring the reliability and relevance of the collected data.

All data collected and analysed in the course of this research was managed in accordance with established ethical and institutional standards. Prior to participation, interview participants were informed of the study's purpose, and the measures to ensure confidentiality and data protection.

Informed consent was obtained from all participants. Access to raw data was limited exclusively to the research team, and all materials were pre-screened by the company before being made available for analysis, ensuring compliance with corporate confidentiality requirements. Institutional guidelines regarding data privacy and protection were strictly followed. Furthermore, no information was used in a way that could cause harm to either participants or the organization, and all sources were properly credited to ensure academic integrity.

1.4.2 Analytical Framework

This study adopts a set of complementary analytical frameworks to systematically structure and interpret both qualitative and quantitative data. Internally, a SWOT analysis and a VRIO assessment were combined with a capability-gap analysis to evaluate A-to-Be's strategic resources, organizational strengths and areas of structural limitation. Externally, comparative benchmarking of U.S. and international tolling and dynamic pricing products was conducted along with a stakeholder power-influence analysis to assess market structure, institutional constraints and company priorities. These frameworks guided the transformation of raw data into analytical findings by providing a clear structure for analysis. Qualitative inputs, such as interview insights and internal and external documentation, were systematically grouped into predefined analytical categories derived from the selected frameworks. Quantitative data, including traffic volumes, revenue estimates, and cost figures, were analyzed through scenario-based financial models and sensitivity analysis to assess their strategic and economic implications. Collectively, this analytical framework is well aligned with the research question, as it enables an integrated assessment of internal readiness, external competitive dynamics, and economic feasibility. Nevertheless, the framework presents limitations, particularly the interpretation of qualitative data involves a degree of subjectivity, as interview insights and documentary evidence must be categorized and synthesized. In addition, the financial analysis

is based on scenario assumptions rather than empirical data from an operational dynamic pricing deployment, which introduces uncertainty into the project results.

1.5 Scope, Delimitations & Assumptions (Written by: Raquel Horta Dos Santos)

1.5.1 Scope

Although A-to-Be operates in other markets such as Poland, the Netherlands, and Portugal, the scope of this work project will focus solely on the U.S. market. Other markets such as Europe may be used to have a better understanding of global tolling market dynamics, emerging trends, best practices, or even existing dynamic pricing systems that could serve as a baseline to the development of the group project itself. Thus, even though

Regarding the technological aspect of this project, the focus will be to find a way to implement dynamic pricing into the existing A-to-Be's technologies, which include roadside mobility connectors, tolling Backoffice systems, and traffic management information systems. Given this consideration, this work project aims to capitalize on existing technologies to design a solution that enhances their performance and effectiveness.

Hence, the business model for the implementation of this project will be based only on A-to-Be's current and potential capabilities in the United States of America instead of a more global approach.

The goal of the dynamic toll pricing solution provided will be the optimization of traffic flow, the support of sustainable mobility objectives, and to strengthen A-to-Be's market positioning as a mobility solutions provider, which means that urban planning or infrastructure development, for instance, are not part of the scope of this work project.

Regarding the stakeholders considered for the development and implementation of the project, these will be A-to-Be, public agencies, and end users. Competitors won't be considered unless it is relevant for benchmarking.

1.5.2 Delimitations

To better understand the scope of this project it is important to also define its delimitations. Firstly, non-tolling technologies, such as parking or transit ticketing will not be analyzed in depth. If this kind of technology is mentioned it will be in a contextual or benchmarking scenario.

Regarding regulatory frameworks, these will be analyzed and discussed only to the extent that they impact dynamic toll pricing adoption, more specifically in the U.S. Thus, any regulations beyond the scope of this work project will not be thoroughly analyzed.

Regarding the time horizon for this project, the deployment year will be considered year zero of the project. Furthermore, projections will be prepared for the nine years following deployment. From that point onward, the project's financials will be treated as perpetuities, as A-to-Be's implementation of dynamic toll pricing in the U.S. is expected to be an ongoing initiative rather than a time-limited project.

1.5.3 Assumptions

Throughout this work project, several assumptions are made in order to develop the implementation plan for dynamic toll pricing into A-to-Be's existing technology and business model. Firstly, it is assumed that A-to-Be's current platforms can be adapted to dynamic pricing easily or with a reasonable amount of effort.

Also, it will be assumed that the U.S. market, namely U.S. agencies and drivers, will be receptive to the implementation of dynamic toll pricing if its benefits are clearly explained.

The implementation of a project of this nature also implies that it is compliant with the existing regulations. Therefore, a scenario of policy stability, where there will not be major regulatory shifts that would prohibit dynamic toll pricing, will be assumed.

2 Entering the United States Dynamic Pricing Market: Strategic Recommendations for A-to-Be

This chapter details strategic recommendations for A-to-Be based on the internal and external insights gathered in the previous chapters. It begins by introducing the institutional "rules of the game" through an overview of the regulatory frameworks, stakeholder power, and constraints impacting deployment and entry decisions, followed by a market entry strategy, with a focus on five key states that present the strongest conditions for optimal market entry. To support these pathways, this chapter also outlines strategic positioning recommendations on how A-to-Be can differentiate from incumbents and strengthen its ability to successfully secure procurements upon entry into any of the proposed markets.

2.1 Regulatory Constraints and Stakeholder Map

2.1.1 Overview of Regulatory Frameworks in the U.S. Tolling Industry

The US has made significant legislative efforts over the decades to encourage the implementation of road congestion management technologies as population growth continues in major cities. At the Federal level, the Transportation Equity Act for the 21st Century (TEA-21) created programs like HOT lanes and permitted toll collection on U.S. Interstate highways for reconstruction or rehabilitation purposes (FHWA 2023a). Additionally, the Value Pricing Pilot Program (VPPP), a federal initiative offering grants to State-led value pricing projects and studies aimed at reducing congestion through tolls and other pricing mechanisms, helped advance projects such as cordon tolls and usage-based vehicle charges (FHWA 2024). These initiatives demonstrate a policy-supported dynamic pricing environment in the US, meaning A-to-Be would be entering a favorable market with adequate government support.

Beyond Federal legislation, State governments (DOTs) have the most influence on the performance of toll roads in the U.S. While regulations differ between states, one commonality includes the creation of a tolling authority or commission who is typically responsible for

operating tolled highways (FHWA 2024). As mentioned in Chapter 3, this can be seen in states like California who has several tolling authorities divided by regional governments. Thus, technology design and deployment must align and adapt to differing legislative requirements, procurement procedures, and operating standards depending on the client or governing body. Some states like California and New York have also introduced certain technical restrictions including prohibiting the use of same pricing algorithms as competitors, to avoid the risk of price fixing (Davis Polk 2025). Vendors are required to ensure systems have transparent pricing mechanisms and technological configurations that comply with State regulations.

2.1.2 Stakeholder Landscape: Comparing Power vs. Influence

Dynamic pricing projects involve constant coordination among a variety of stakeholders that all shape and influence the dynamic pricing market and how vendors like A-to-Be design and deploy technology systems. While A-to-Be's main objective is to directly satisfy the client, its strategy should correspond with all stakeholders who hold decision-making power or influence, whether directly or indirectly. A stakeholder map was created to visualize how different stakeholders in the dynamic pricing market compare in power and influence (see Appendix 6).

Evidently, those with the highest power and influence include State DOTs, Tolling Authorities or Commissions, and Metropolitan Planning Organizations (MPOs) as they directly impact the short- and long-term transportation planning objectives and initiate all dynamic pricing projects. In addition to this are P3 Concessionaires who operate and co-operate most highway networks in the U.S. Stakeholders that have reduced power but maintain a high influence over operators include the public, advocacy groups, and local media. These individuals can affect whether dynamic pricing is publicly supported and accepted by local communities, which are typically included in the equity assessment and public hearing process. In addition to this, technical consultants or advisors can also play a vital role in the procurement process through the production of feasibility studies and responsibility for validating technical deliverables.

Stakeholders that have low influence but high power include traffic management centres, IT teams within the DOT, roadside equipment maintenance teams, and contracted engineering firms. Although such parties do not influence policy or procurement decisions, A-to-Be must ensure that its solutions integrate seamlessly with their system architecture during deployment and meet technical standards. Lastly, those holding low influence and power include equipment vendors and individual drivers, who hold no decision-making but shape user experience.

Together, these regulatory frameworks and stakeholder requirements define the boundaries within which A-to-Be must operate when entering the U.S. dynamic pricing market and how the company can integrate dynamic pricing. Pricing solutions need to be state-specific, algorithm transparency is legally required in some cases, and entering independently poses more difficulties without consultant endorsement and public support. These constraints shape A-to-Be's market entry strategy and positioning, as discussed in the following section.

2.2 Strategic Market Entry

2.2.1 Market Entry Points: Five Key States

The insights from Chapter 3 clearly indicate a brownfield dominant market and signals the optimal market entry strategy for A-to-Be. While greenfield opportunities present less barriers to entry given A-to-Be would be competing on an even playing field, the reality in the U.S. is there are many HOT and other managed toll lanes already in place. Most infrastructure upgrades in recent years have involved HOV to HOT lane conversions and additional express lanes to ease traffic congestion on major road networks (FHWA n.d.n). Additionally, from 2021-2024, contract values heavily favored brownfield opportunities according to A-to-Be internal research documents (A-to-Be 2024c). The dynamic pricing market currently does not have a widespread number of agencies and concessions, and many are tied to long-term P3 contracts. As such, A-to-Be must prioritize brownfield dynamic pricing markets with upcoming procurements,

unaddressed market gaps, system modernization efforts, and pilot initiatives. Based on this criteria, five states emerge as potential entry points for initial expansion.

Market Entry 1: Washington State

One market with great entry potential for A-to-Be is Washington State. There are five active tolling facilities, two of which are dynamically priced including the SR 167 HOT Lanes and the I-405 Express Toll Lanes (WSTC n.d.). Future tolling projects including the SR 509, the SR 167 Expressways, and the I-5 Bridge, are expected to commence in the coming years and will operate under time-of-day variable pricing (WSTC 2025). Although it is not confirmed that such projects will convert to a dynamic pricing system in the near future, both the Washington State Transportation Commission (WSTC) and the WSDOT have expressed the importance of reducing overall traffic congestion on existing and planned highway networks. More specifically the WSTC Annual Tolling Report for 2025 recommends prioritizing projects that aim to reduce congestion, while the WSDOT Highway Plan for 2024 confirms that congestion pricing strategies are being considered in project planning efforts (WSTC 2025; WSDOT 2024). Based on these objectives and given the current presence of dynamic pricing in the State, it is likely that Washington will explore the prospect of expanding its dynamic pricing strategies among future toll projects, making this an attractive entry market for A-to-Be to monitor.

As mentioned in Chapter 3, some BOS issues were documented by the State auditor due to a 2-year delay in the rollout of a replacement in the State's Good to Go tolling system (Office of the Washington State Auditor 2022). The findings of this report suggest a major factor was related to the BOS vendor as many deadlines were consistently missed due to misalignment with agency requirements, leading to project deferrals and resulting in significant financial costs to the agency (Office of the Washington State Auditor 2022). As WSDOT plans for future system modernization, these challenges indicate a clear need for transparency in solutions that

reduce further risk for the agency. For A-to-Be, these gaps are a strategic entry point, particularly if the company strengthens its relationship with WSDOT by leveraging its current market presence and credibility gained through its ongoing RUC pilot project.

Market Entry 2: California

California exhibits ample opportunities for strong market entry. The State's decentralized agency structure allows A-to-Be to explore multiple clients within the same market, increasing the probability of securing a dynamic pricing project reference in this region. California's 27 tolling facilities are operated by a total of 13 different tolling agencies across various major cities such as San Francisco, Los Angeles, and San Diego, with each agency managing its respective facilities (FasTrak n.d.). Dynamic pricing is extremely common in this market, with at least 11 facilities currently operating under this pricing strategy through agencies such as SANDAG, OCTA, RCTC, SBCTA, Alameda CTC, and VTA. Notably, agencies like OCTA, RCTA, Alameda CTC, and VTA have implemented dynamic pricing across all tolling facilities within their jurisdiction, indicating that continuous adoption is likely in future projects.

Operators in California are undertaking several toll road projects to meet the vast growth in population and congestion across the State. Near Los Angeles, the 241/91 Express Connector project is currently under development, with construction anticipated to begin in 2026, which is confirmed to be dynamically priced (Transportation Corridor Agencies 2025). Near San Francisco, the VTA plans to continue its advancement of Phases 4 and 5 of the Silicon Valley Express Lanes project (US 101), expected to integrate dynamic pricing with construction anticipated between 2025-2029 (VTA n.d.). Near San Diego, a 27-mile express lane corridor is currently under development and projected to continue throughout the next couple of decades, in partnership with Caltrans and USDOT (Keep San Diego Moving 2022). Although dynamic pricing is not confirmed for this corridor, it is assumed that this project will likely use this

pricing strategy as it is currently being utilized in other SANDAG facilities. These projects provide A-to-Be with plenty of market entry opportunities and signal a clear interest in future highway development and integration of dynamic pricing across its tolling facilities.

Although dynamic pricing is widely supported in California, previous vendor system integration failures have led to significant revenue loss and revealed critical gaps in system transparency. For example, audit findings of toll operations on the SR-125 in San Diego revealed faulty technological misconfigurations and vendor oversight on quality control, damaging trust between operator-vendor relationship (Ruby 2024). As a result of these issues, A-to-Be, in partnership with Deloitte, secured a contract with SANDAG to replace the existing tolling system, earning them an opportunity to demonstrate their technological capabilities and position themselves as a reliable, trusted vendor in the region (Times of San Diego 2024). This demonstrates A-to-Be's ability in addressing market gaps through accurate, transparent, and well-established technology systems, a useful strategy and reference point that can be leveraged in future procurements during market entry.

Market Entry 3: Florida

Another market demonstrating a strong transition to dynamic pricing is Florida. FDOT is currently in the process of updating their 30-year Transportation Plan, outlining objectives that include prioritizing traffic and congestion management, particularly via express lane facilities, using strategies such as access control, vehicle eligibility standards, and pricing (FDOT n.d.). The Department, in partnership with Florida's Turnpike Enterprise (FTE), currently operate a total of 11 toll facilities, with only one operating under a dynamic pricing system (the I-4 Express) and several planned for future adoption (FDOT 2025; FDOT 2025a). This includes various express lane projects in Tampa Bay that aim to address traffic congestion issues through the implementation of dynamic pricing (FDOT n.d.a; FDOT 2025a; FDOT. n.d.b). Florida's

ongoing efforts to congestion management and strong political support for dynamic pricing present promising market opportunities that A-to-Be can continue to monitor in the coming years as new procurements emerge.

To further justify Florida as a high-potential contender, market gaps similar to that of Washington and California, also present weaknesses in incumbent vendor technology. As mentioned in the previous chapter, Florida's SunPass launch failures in 2018 resulted in millions of unprocessed transactions, billing disruptions, and customer overcharges, causing a significant loss in revenue and creating public mistrust (Fisher 2019). This example reinforces the State's need for reliable technology systems, backed by adequate quality testing and vendor transparency and accountability. Given the State's prioritization of express lanes projects and dynamic pricing implementation, it is critical that A-to-Be position itself as a dependable alternative to incumbent vendors in the market, aligning with Florida's future transportation objectives while exhibiting high-quality system integrity and performance.

Market Entry 4: North Carolina

Over the years, North Carolina has shown increasing interest in the modernization of its existing tolling systems and integration of dynamic pricing mechanisms. The NCDOT and North Carolina Turnpike Authority (NCTA) currently have 11 toll projects, three of which are complete and open to traffic including the Triangle Expressway (2024) and Monroe Expressway (2018), which were modernized to include all-electronic tolling (AET) technology, and the I-77 Express Lanes (2019), which is North Carolina's first and only dynamically-priced tolling system, operated and maintained by I-77 Mobility Partners (NCDOT 2024; I-77 Express n.d.). The remaining eight projects are either under construction or under development, with some also under consideration for the next 5 years, including Phase 2 of the Complete 540 and the widening of the I-77 South Express Lanes, with construction for both projects anticipated

for 2029 (NCDOT 2025; NC First Commission 2020). Entering this market would provide A-to-Be with considerable near- and medium-term project opportunities to integrate dynamic pricing into existing tolling infrastructure, allowing the company to provide its modular solutions within future potential procurements.

According to A-to-Be, the NCTA was also involved in two dynamic pricing procurements between 2021 and 2024, consisting of one greenfield and one brownfield opportunity, suggesting this agency is open to the integration of dynamic pricing solutions in their tolling systems (A-to-Be 2024c). This includes the NCTA's procurement in 2021 for a Roadside Toll Collection System (RTCS) with dynamic pricing capabilities for the I-485 Express Lanes project, anticipated for completion in 2026 (NCDOT 2025-a). The NCTA's recent investments also follow NC First Commission's findings, a Commission tasked with providing recommendations on the financing strategy of transportation in North Carolina over the next 10 years, which suggest that highway tolling projects focus on modernization and relieving overall traffic congestion (NC First Commission 2021). All these efforts are clear indicators of a growing and evolving market open to the adoption of dynamic pricing in its tolling systems, creating favorable market entry conditions for A-to-Be.

Given the number of upcoming toll projects expected, and based on the NCTA's commitment to toll modernization, the agency has created a roadmap outlining upcoming procurements in line with both current and new projects. Specifically, although the Monroe Expressway's current contract expires in January of 2027, a new contract for a RTCS is expected for January of 2026 (NCTA 2025a). Considering the NCTA's previous I-485 Express Lanes RTCS procurement, it is assumed that this RTCS contract will likely require dynamic pricing capabilities, making it an ideal opportunity for A-to-Be to potentially compete for a system modernization contract. Additionally, the NCTA also anticipates several procurements in the longer-term, including a BOS contract following its expiration in October 2030, as well as

RTCS procurements for the Triangle Expressway and Complete 540 ahead of contract expiration in June of 2033, with all new contract dates yet to be determined (NCTA 2025a). These planned procurements, combined with strong political will, interest in highway modernization and efficiency, and the absence of entrenched incumbent vendors, presents North Carolina as an optimal market entry point for A-to-Be to integrate dynamic pricing into its existing solutions, translating it into scalable U.S. market references.

Market Entry 5: Illinois (long-term)

Entering the Illinois market offers a strategic opportunity for A-to-Be as the State has not yet adopted dynamic pricing but is actively exploring it. In a recent release of Illinois Tollway's 20-year Strategic Plan, main objectives include the development of new facilities and modernization of existing tolling systems, specifically with intentions to "explore dynamic pricing" as part of broader sustainability efforts, and to "allow for alternative procurement and delivery methods, along with pilot, investment and commercialization partnerships" (Illinois Tollway 2025 p.20-21). This indicates State openness to new vendors and innovative technology. Additionally, in a previous study for the I-55 managed lanes, the IDOT concluded that dynamic pricing should be incorporated upon completion of the project as it was found to be the most effective solution for both congestion relief and traffic flow (IDOT n.d.). Both initiatives demonstrate a clear direction away from traditional methods to more innovative strategies, aligning well with political objectives. For A-to-Be, this is a market that offers immense potential, specifically in the long-term being that it is not deeply entrenched by incumbent vendors, allowing A-to-Be to establish a strong presence from the onset.

2.2.2 Strategic Positioning and Recommended Value Proposition

Having identified five key potential market entry points, A-to-Be must strategically define what it stands for within these markets and position themselves as the best option for agencies among other incumbent competitors in these regions. This is especially important in brownfield

markets where competition is typically high and existing business relationships are well-established. In doing so, A-to-Be can better align its product performance and capabilities with agency needs, based on current market gaps, setting themselves apart in an industry characterized by strong vendor lock-in. This section builds on the insights gathered in the previous chapter to help define A-to-Be's identity in the U.S. dynamic pricing market, with a specific focus on the five key entry states.

Chapter 3 revealed numerous instances of failed system deployments and operational discrepancies across the U.S., demonstrating major limitations in incumbent vendor solutions. Agency concerns often involve the absence of reliable, transparent systems, with many experiencing integration issues with existing tolling systems, resulting in significant financial impacts, project delays, and public mistrust. Consequently, agencies are seeking vendors who address these gaps by providing transparent pricing logic, and adequate product performance that they can depend on. These needs also correspond with increasing regulatory requirements concerning data governance, obliging vendor systems to operate independently of competitors and ensure protection of sensitive mobility data. As system modernization continues to be prioritized, agencies also favor more flexible, cloud-based solutions that are auditable and do not require inefficient vendor intervention. Furthermore, vendors whose solutions stem beyond traditional tolling systems to cover a broad range of future-oriented mobility solutions can be viewed as more innovative and aligned with sustainable mobility objectives. Altogether, these findings shape the direction in which A-to-Be would need to position itself for successful market entry, guided by three core elements that respond directly to the unmet needs identified.

Firstly, A-to-Be should emphasize its product modularity and brownfield compatibility. Given the predominant brownfield market with systems composed of rigid legacy architecture, it is crucial that A-to-Be promotes seamless integration of its product offering with existing infrastructure. Previous cases of system implementation failures reinforce the importance of

successful integration on agency operations and vendor credibility. A-to-Be's MoveBeyond platform is fundamental in this positioning because its vendor-neutral, API-focused, and cloudy-ready architecture enables seamless integration without requiring full system replacement, useful in brownfield markets like Washington and North Carolina. This modular design supports agency expectations and positions A-to-Be as a low-risk contender, which is essential in the procurement process.

Secondly, A-to-Be should highlight transparency and configurable pricing logic across its technology solutions. These qualities are critical for vendors to execute and are prioritized by state governments, as many procurements require compliance with transparency regulations. Previous audit findings suggest agencies are likely to deter from opaque "black-box" systems that offer limited traceability and hinder public trust. This gives A-to-Be the space to circumvent these weaknesses by enabling fully transparent and configurable pricing logic, positioning the company as a vendor who values system transparency, vendor accountability, and prioritizes the interests and needs of the client. This would be especially valuable in markets like Florida and California, where vendor trust is highly sensitive.

Lastly, A-to-Be should market as a broad, future-oriented mobility solutions integrator, stemming beyond traditional tolling mechanisms. Given emerging state sustainability objectives and growing mobility shifts, agencies are seeking vendors that support a wide range of services beyond the typical tolling solutions. This includes products equipped with advanced technologies such as AI, V2X, and GNSS-based tolling, and services relating to EV charging, parking, and public transportation. A-to-Be's offerings directly support this direction, characterizing the company as flexible and adaptable to future-oriented expansion projects while highlighting its ability to scale beyond tolling. This positioning is particularly relevant in markets like Illinois, North Carolina, and California where sustainability and efficiency objectives shape transportation planning.

Overall, these positioning elements help distinguish A-to-Be from incumbent vendors by presenting the company as an adaptable, transparent, and progressive alternative that is well-aligned with agency needs. For agencies who lack transparency and flexible dynamic toll pricing solutions, A-to-Be is the future-oriented vendor that offers advanced, transparent, and seamless integration systems for brownfield dominant markets because its technology is vendor-neutral, configurable, and interoperable, reducing implementation risk and strengthening client control.

2.3 Competitive Strategy for Securing Procurements

Building on the three recommended strategic positioning elements for differentiation established in the previous sub-chapter, this section outlines how A-to-Be can compete successfully and secure procurement contracts in the U.S. dynamic pricing market. The recommendations proposed form the basis of this section and center around three key pillars: building credibility, gaining references, and obtaining legitimacy.

2.3.1 Building Credibility

Vendors who already have a reputation of providing credible solutions often have a competitive advantage because agencies automatically perceive them as low-risk and reliable in executing client demands. As previously mentioned, reliability is something that agencies actively seek during the procurement process and have become increasingly important given prior vendor integration issues. Since A-to-Be has not yet established themselves in the U.S. dynamic pricing market, building credibility in this sector is vital to securing future contracts. However, achieving this is far more difficult when entering the market independently. Thus, A-to-Be can benefit from forming partnerships with trusted engineering consultancy firms who can validate the company's capabilities and reduce agency concerns.

Given the extensive size and complexity of most highway projects in the U.S., DOTs rarely tackle them alone but rather depend on trusted engineering consultancy firms to support in the

design and construction of infrastructure, conduct feasibility studies, define technical requirements, and assist with procurement strategies (FHWA n.d.a). Engineering consultancy firms play a vital role in project success and execution and see the project through its entirety. This means that engineering firms already have the built trust from agencies that A-to-Be would require to easily enter the market and alleviate perceived risk. Therefore, a partnership or subcontracting model with an established engineering firm builds credibility and is a solid entry strategy for A-to-Be to enter the dynamic pricing market.

Although strategic and effective, A-to-Be's partnership with Deloitte alone does not fully provide the company with the required engineering and corridor-design network influencing agency decisions. By diversifying their partnership network, A-to-Be's visibility could increase significantly. Firms such as Kimley-Horn, HNTB, WSP, and AECOM, who are actively involved in the dynamic pricing market, are all examples of companies that A-to-Be could target to build credibility and potentially secure project references.

More specifically, AECOM is present in projects such as the Triangle Expressway in North Carolina, the SR 91 in California, and the I-405/Brickyard to SR 527 Improvement project in Washington State, three projects that are expected to implement dynamic toll pricing once complete (AECOM n.d; AECOM n.d.a; AECOM 2023). Another example is HNTB who assisted in the final civil and structural design of the I-15 in San Diego, a project with 20 miles of dynamic variable pricing (HNTB n.d.). The firm's main responsibilities included creating preliminary planning assessments and evaluating, selecting, and negotiating toll system integrator contracts (HNTB n.d.). Both AECOM and HNTB play an influential role in the tolling industry across the U.S. and such a partnership would help bring immediate entrance into the market.

By diversifying its partnership network to include trusted engineering firms, A-to-Be can build the credibility needed to become more visible in the brownfield market. Moreover, this recommendation also allows A-to-Be to enter contracts that would otherwise be difficult to achieve independently and helps increase A-to-Be's overall client network. These partnerships can have a lasting effect on the success of A-to-Be in the dynamic pricing market, enabling initial opportunities for the company to prove its capabilities, and eventually placing them "on-par", or even ahead, of incumbent vendors in future procurements.

2.3.2 Gaining References

Although A-to-Be has established a presence in the U.S. tolling industry, and has countless successful international projects verifying the company's capabilities, it has yet to secure a dynamic pricing project in the U.S. Given how robust and extensive most expansion projects are, agencies are more inclined to choose a vendor with credentials that demonstrate the company's integration abilities with state infrastructure, making entry more difficult. Therefore, A-to-Be must secure a project with the least amount of risk to ultimately prove its capabilities.

Launching a smaller scale, affordable pilot project allows A-to-Be to generate its first dynamic pricing reference while reducing potential risks. This includes opportunities to support or co-develop a single lane or short corridor pilot to test capabilities in practice and verify product integration with existing systems. The U.S. DOT often encourages the use of pilots to test road pricing strategies prior to a full rollout because it allows agencies to test and evaluate pricing logic, system integration, and public acceptance, reducing both political and financial risk (USDOT 2008). This can be seen in many pilots including the MnPASS's conversion of HOV to HOT lanes, which initially faced public opposition but resulted in increased public acceptance (FHWA 2021). Additionally, the infamous Stockholm congestion pricing pilot, which evaluated how congestion pricing would affect traffic, emissions, and public perception within a 7-month period, found that traffic, congestion, and emissions dropped, while public

acceptance increased (Eliasson et al 2009). Both cases further emphasize the importance of pilot projects in shaping public perception and demonstrate that successful pilots can generate strong references in a low-risk environment. In doing so, they reduce both political and procurement risks, as agencies are able to evaluate a vendor's performance without committing to large investment contracts, making pilot projects an effective pathway for A-to-Be to establish its reputation in the industry.

Through a pilot project, A-to-Be can showcase its compatibility with current brownfield market conditions through integration with existing BOS infrastructure and roadside technology. The results of this pilot would evaluate A-to-Be's pricing performance based on traffic conditions, vehicle throughput, and system quality and transparency. This helps agencies assess whether A-to-Be possesses the ability to implement dynamic pricing models in larger scale projects. Such pilots can potentially be executed in the five key states mentioned previously including the SR-167 in Washington, the I-680 Sunol Express lanes in California, the I-275 Pinellas Corridor in Florida, the upcoming procurement of a RTCS on the Monroe Expressway in North Carolina, and future pilot programs aligned with the Illinois Tollway Strategic Plan.

This recommendation aligns well with A-to-Be's objectives by providing the necessary references to expand in the U.S. market and give proof of dynamic pricing capabilities and product performance. Pilots are an ideal market entry strategy because they do not require substantial investment costs for A-to-Be and provide a low-risk solution for both the company and agency, making them easier to execute than large-scale projects.

2.3.3 Obtain Legitimacy

For A-to-Be, obtaining legitimacy and visibility in the U.S. dynamic pricing market are critical to successfully compete against incumbent vendors. Strengthening these qualities ensures that agencies perceive A-to-Be as a knowledgeable, serious contender, positioning them as high-priority during the procurement process. Hence, A-to-Be should actively engage with trusted

industry associations valued by DOTs and other agencies for industry knowledge and research, to help endorse the company's position in the market.

Associations such as the International Bridge, Tunnel and Turnpike Association (IBTTA), Institute of Transportation Engineers (ITE), the Intelligence Transportation Society of America (ITS America), and the Transportation Research Board (TRB) are all associations that DOTs and other agencies trust for industry knowledge and research. A-to-Be currently engages with all four associations in various ways. They are already an active member and platinum sponsor of the IBTTA, they regularly follow ITS America conferences and sometimes participate, and they follow the TRB weekly digests and conferences, although this association's academic direction falls outside of company operations. Considering A-to-Be's current involvement, this recommendation focuses on the transition from general participation to strategic knowledge sharing contributions within these associations.

Although equally valuable, the associations listed above can offer different strategic benefits for A-to-Be. The IBTTA is an international tolling association for owners and operators of toll facilities, and part of their mission is to deliver industry education through webinars and forums to advance tolling operations (IBTTA n.d). This association provides A-to-Be with a platform for the company to share its expertise and successful case studies directly to agencies and State DOTs. Events such as the Finance, RUC & Managed Lanes Summit provides opportunities not only for sponsorship, but to participate in the event by submission of a presentation summary, where the company could potentially be selected to be a speaker, representing both company knowledge and accomplishments (IBTTA 2025). Through this, A-to-Be can highlight relevant case studies including international projects, its successful SANDAG contract in San Diego, and its RUC pilot in Washington. This helps strengthen A-to-Be's credibility and demonstrates readiness for future U.S. dynamic pricing projects.

ITS America helps promote innovative, technology-driven solutions that make mobility efficient, uniting governments and industry professionals through knowledge sharing and policy insights (ITS America n.d.). They host both national and international conferences demonstrating emerging industry trends and provide knowledge sharing through reports, white papers, and case studies (ITS America n.d.). Similarly, the ITE provides industry professionals with conferences and publications, focusing less on technological innovation and more on industry education and research (ITE n.d.). A-to-Be can strengthen engagement with these associations through white papers or technical briefs to communicate industry findings, trends, and best practices, which can be further enhanced by co-authoring with engineering firms gained through partnerships, as previously recommended.

By shifting from general member and sponsor to a recognized expert in the industry, A-to-Be can solidify themselves as a legitimate player in the dynamic pricing market, increasing visibility and reducing agency uncertainty. Active engagement with associations, combined with the recommended actions, are key to increasing the chances of being selected for pilot projects, contracted through RFPs, and trusted by agencies to execute complex deployments.

Key Takeaways

Chapter 4 recommends pursuing a brownfield market entry strategy specifically targeting five priority states, each offering market gaps highlighted in Chapter 3, that A-to-Be can use to position themselves and differentiate from incumbents accordingly. To gain a competitive advantage and secure procurements, A-to-Be must act upon three mutually reinforcing pillars: building credibility through targeted partnerships, gaining references through low-risk pilots, and obtaining legitimacy through knowledge sharing and industry associations. These recommendations form the foundation for the detailed execution plan and phased roadmap that will follow in Chapter 5, translating this strategy into a replicable action plan for dynamic pricing deployment.

3 Implementing Dynamic Pricing Successfully

3.1 Summary of Key Findings

3.1.1 Barriers Preventing Successful Dynamic Pricing Implementation (Written By: Henrique Moura Neto Lírio Galveia)

Several barriers currently limit A-to-Be's ability to successfully implement dynamic pricing. The first relates to internal capability and product maturity. Although the company has strong experience in roadside systems, back-office processing and traffic management platforms, its dynamic pricing functionality remains at an early stage of development. The organization does not yet have a commercially validated pricing engine capable of operating in real time as a complete data-to-price loop. Existing research and simulation tools demonstrate technical potential, but they have not yet translated into an operational system ready for deployment. The absence of a live dynamic pricing reference further restricts credibility in procurement processes and reduces the likelihood of being considered for high-exposure managed lane projects. Moreover, internal expectations suggest that full maturity may only be achieved within the next few years creating a timing mismatch with the level of robustness expected by agencies for mission-critical infrastructure.

A second barrier emerges from the competitive landscape, which is very consolidated and dominated by long-standing incumbents with extensive references on major express lane corridors. These vendors benefit from contractual continuity, deep integration with existing systems and strong institutional trust. In addition, the majority of opportunities occur in brownfield environments, where systems are already in place and agencies typically prefer to retain the incumbent provider due to integration complexity and risk aversion. Past failures in toll system upgrades across the country have increased scrutiny, making agencies even less willing to trust unproven vendors into pricing and revenue-critical components.

A third barrier is institutional and political. Dynamic pricing in the U.S. is formed by complex state-level regulations, approval procedures and governance structures involving multiple authorities engineering consultants and concessionaires. Tolling and pricing continue to be politically sensitive topics, and even well-designed initiatives can encounter public or legislative pushback. As a result, agencies tend to be cautious when considering new suppliers especially when the technology is still developing and has limited real-world deployment.

Finally, dynamic pricing requires a demanding operational and technical environment that is not always present in existing corridors. High-quality, continuous data streams, multi-sensor detection, reliable classification and interoperable back-office systems are essential, yet many infrastructures rely on legacy architectures that complicate integration. Previous incidents in tolling have shown how data inconsistencies or system misalignments can generate revenue loss and be negative for vendor's reputation. For A-to-Be, this necessitates a gradual, low-risk validation approach, which slows deployment and extends the timeline needed to demonstrate reliable performance.

3.1.2 Critical Success Factors Emerging from the Analysis (Written By: Henrique Moura Neto Lírio Galveia)

Achieving successful dynamic pricing implementation for A-to-Be depends on a combination of internal, external, strategic and operational conditions that must align to overcome the barriers previously identified. From an internal perspective, success requires strengthening the technological readiness of the solution by consolidating the existing capabilities of LinkBeyond, MoveBeyond and Atlas into a cohesive real-time pricing engine. The company's strong foundations in sensing, transaction processing, and traffic management offer meaningful advantages, yet these must evolve into a reliable continuous data-to-price loop supported by consistent algorithm performance, high-quality data collection, and robust integration across

system layers. Advancing these internal capabilities is essential, given the innovation gap relative to competitors and the risk-averse nature of the tolling industry.

At the market level, A-to-Be must position itself to succeed within a predominantly brownfield environment where most opportunities involve upgrading existing systems rather than designing new ones. The ability to integrate seamlessly with legacy architectures emerges as a decisive factor, as agencies prioritize solutions that minimize operational disruption, reduce technical risk, and remain vendor neutral. Transparent, auditable and configurable pricing logic is also a very important success factor, reflecting growing demand for systems that support regulatory compliance and avoid opaque algorithmic behaviors. These expectations are strengthened by the competitive landscape where incumbent vendors have faced integration failures and governance challenges, increasing agencies' focus on transparency, reliability and operational robustness.

Strategically, the analysis indicates that early market success requires building credibility through partnerships with established engineering consulting firms. These actors hold significant influence during project design and procurement, and their endorsement reduces agency concerns about adopting a new dynamic pricing provider. Securing a low-risk pilot constitutes another essential success factor, as it allows A-to-Be to demonstrate pricing performance, integration quality, and operational maturity in a controlled environment without requiring large-scale commitments from the agency. Such a reference is vital to obtaining visibility and legitimacy in a market where proven dynamic pricing deployments strongly determine vendor selection.

Operationally, success depends on the ability to demonstrate algorithm stability, data integrity and interoperability under corridor-specific conditions. The phased roadmap highlights the importance of institutional acceptance, consistent performance during calibration phases and

alignment with agency timelines for corridor renewal or modernization. Strengthening visibility through active contributions to industry associations further strengthens legitimacy and supports long-term strategic positioning. Taken together, these factors define the critical conditions that must be met for A-to-Be to establish a credible, competitive and scalable presence in the dynamic pricing market.

3.1.3 Current Maturity Level of A-to-Be's Dynamic Pricing Capabilities (Written By: Henrique Moura Neto Lírio Galveia)

A-to-Be's dynamic pricing capabilities are best described as being at an intermediate level of maturity, where strong technological foundations coexist with significant gaps in commercial deployment. The company already operates robust roadside, back-office and traffic management platforms through LinkBeyond, MoveBeyond and Atlas, which together provide many of the functional components required for dynamic pricing, including high-frequency traffic sensing, transaction processing, account management and integration with traffic management centers. Long-standing experience in tolling, participation in advanced research and innovation projects such as TANGENT and MODALSHIFT, and a growing track record in road user charging and connected mobility show that the core data, modelling and systems-integration competences are in place.

However, these elements have not yet been consolidated into a commercially validated dynamic pricing engine that can operate as a continuous data-to-price loop in live corridors. The absence of an operational reference in managed lanes or congestion-pricing schemes remains a critical limitation, particularly in markets where agencies heavily rely on proven projects to reduce perceived risk. Internally, the company expects its dynamic pricing modules to reach technology readiness levels six to seven within a two-to-four-year horizon, which implies that

current development is still focused on validation, integration hardening and alignment with real corridor conditions rather than full-scale deployment.

The roadmap structured around the Monroe Expressway reflects this transitional status. Early phases emphasise analytical and advisory roles, controlled pilots and non-intrusive validation of algorithms using corridor data without affecting live operations, which is consistent with a solution that is not yet treated as mission critical by agencies. Risk management and KPI frameworks further underline that the present focus is on demonstrating algorithm stability, data integrity, interoperability with existing roadside and back-office systems and institutional acceptance, all of which are prerequisites for higher maturity levels.

Overall, the current maturity of A-to-Be's dynamic pricing capabilities can be characterized as technically promising but pre-commercial, with solid building blocks and a clear pathway to deployment, yet still lacking the operational proof, hardened integration and reference projects that define fully mature dynamic pricing providers in the United States.

3.1.4 What Quick Wins vs. Long-term Opportunities Exist? (Written by: Beatriz Isabel Martins Gonçalves)

A first set of quick wins emerges directly from A-to-Be's existing assets and market presence. The company already operates a mature, integrated tolling and back-office ecosystem (MoveBeyond, LinkBeyond, and Atlas). As detailed in chapter 2, these platforms already provide advanced capabilities in data collection, back-office processing, interoperability, and traffic management corresponding to the technical expectations of U.S. transportation agencies (state and regional public-sector clients). These capabilities can be leveraged to demonstrate operational readiness for Brownfield environments, where the majority of U.S. dynamic pricing opportunities currently exist. As U.S. transportation agencies increasingly favour flexible, vendor-neutral, and cloud-ready architectures, giving A-to-Be's emphasis on interoperable

system design offers a low-risk differentiator that can be communicated clearly in early engagements.

A second quick win concerns building credibility through strategic partnerships, which the benchmarking analysis identifies as a critical success factor in the U.S. market. Transportation agencies frequently rely on established engineering and consulting firms, such as AECOM, HNTB, WSP, and Parsons, for project evaluation, procurement preparation, and vendor recommendation. By forming early alliances, A-to-Be can mitigate the high perceived risk associated with entering a mature and competitive market, while gaining visibility in early project stages. A-to-Be's existing presence in the U.S. further facilitates engagement and supports these early relational wins.

A third quick win involves institutional visibility and participation in industry networks. As documented in Chapter 4, A-to-Be is already a member of major U.S. mobility and tolling associations such as IBTTA, ITS America, and ITE. Strengthening its presence within these institutions through white papers, technical presentations, and case-study dissemination offers a low-barrier opportunity to increase brand recognition and signal commitment to the dynamic pricing ecosystem.

On the long-term horizon, the most significant opportunity involves developing and commercially validating an integrated, real-time dynamic pricing solution. As identified in the gap analysis (Appendix 3) A-to-Be currently lacks both a live dynamic pricing reference and a fully integrated pricing mechanism capable of real-time recalibration.

A second long-term opportunity relates to institutionalizing the transition from research to commercial products. A-to-Be has strong modelling competencies, yet these have not evolved into commercial deployment frameworks. Establishing internal structures, such as dedicated

dynamic pricing units, product development roadmaps and cross-functional governance, would help accelerate the pathway from algorithmic research to operational implementation.

Finally, dynamic pricing capability development opens the door for A-to-Be to expand strategically into other next-generation tolling domains, including GNSS-based tolling, MaaS integration, and AI-enabled predictive mobility systems. These areas align with A-to-Be's existing technological direction and broader industry trends, offering long-term paths for diversification and competitive strengthening beyond the U.S. dynamic pricing market.

3.2 Strategic Recommendations

3.2.1 A-to-Be's Dynamic Pricing Vision and Objectives (Written by: Ema Estevães Pereira)

Dynamic pricing technology is vastly emerging in the U.S. as States look to reduce traffic congestion in accordance with economic and sustainability objectives. As a result of this shift, A-to-Be would benefit greatly from entering this specific sector because it stems beyond just an added technological feature to the company's portfolio. It provides the company with future growth opportunities in line with State directions for more innovative, sustainability-driven technological solutions to mobility. Currently, A-to-Be demonstrates a strong willingness to provide solutions that meet this growing demand based on the company's innovation roadmap highlighted in Chapter 2.4. Additionally, the market gaps noted in Chapter 3 reinforce State requirements for more transparent and reliable technology with limited deployment risks. As such, A-to-Be's dynamic pricing vision should be to position themselves as a trusted, future-oriented mobility solutions provider, driven by technological innovation and capable of delivering accurate pricing algorithms that are scalable and adaptable to U.S. systems.

The recommendations outlined throughout the work project help guide the main objectives for A-to-Be to undertake. The analysis indicates a strong need for reliable and adequate systems that agencies can count on to meet both performance standards and economic and sustainability

goals. For this reason, one of A-to-Be's objectives should be to tailor dynamic pricing systems to ensure full capabilities of delivering travel time reliability for users and real-time responsiveness. This means ensuring the technology and product offerings can be seamlessly integrated with existing infrastructure while being up to par with current dynamic pricing systems in the U.S. The company's MoveBeyond platform enables such interoperability and should be leveraged in achieving this objective.

By extension, A-to-Be should also focus on ensuring pricing systems are transparent and auditable given previous agency issues with vendors. This not only enhances A-to-Be's reputation in the dynamic pricing market but helps differentiate from other incumbent vendors who have fallen short in this area. This objective specifically addresses the current market gaps and agency concerns.

In addition to technological development and transparency, A-to-Be should direct its main priority to building credibility and establishing a market presence through references. In order to gain recognition and secure procurements in such a highly competitive market, A-to-Be would need to build its dynamic pricing credentials to prove its capabilities and gain the trust needed from agencies. As mentioned throughout the work project, pilot projects are the best option to achieve this objective as they present the lowest risks for both A-to-Be and the client and allow A-to-Be to showcase their abilities at a smaller scale rather than through full large-scale deployments. If successful, the firm would then be able to scale to larger State projects, and potentially even enter other emerging transportation technology markets, further securing long-term market presence for A-to-Be.

3.2.2 Market Segment Priorities: What should A-to-Be prioritize first? (Written by: Ema Estevães Pereira)

To determine which market segments A-to-Be should prioritize first, a set of criteria can be established to ensure the firm maximizes results and reduces overall company risk. Based on the analysis and findings of this work project, A-to-Be should target States that have already integrated dynamic pricing into existing toll infrastructure or have planned for it in future transportation planning documents. This ensures less resistance upon entry into markets that already have the political will and regulatory objectives to support the implementation of dynamic pricing and makes it easier to secure procurements. Additionally, A-to-Be should also consider its existing technological capabilities and ensure alignment with State infrastructure systems to reduce risk and avoid creating entirely new modules. Lastly, A-to-Be must prioritize markets that offer the strongest opportunities to secure a small pilot project, which is crucial for the company's growth and building dynamic pricing references in the U.S.

The specific use segments that A-to-Be should prioritize are managed express lanes including HOT corridors as they already have the infrastructure in place to integrate dynamic pricing. This is the easiest environment to secure A-to-Be's initial reference because tolling mechanisms already exist which mean there is less public resistance, and agencies are more inclined to enhancing existing, outdated systems. A-to-Be has the experience and technological resources and capacity to deliver solutions for this segment, allowing the firm to integrate dynamic pricing without major architectural redesign.

Within the managed lanes sector, A-to-Be must also prioritize critical States that demonstrate the optimal environment for the company's successful market entry. These states were identified as Washington, California, Florida, North Carolina, and Illinois, as all markets exhibit commitments to corridor expansions, modernization, and clear sustainability and congestion reduction objectives. Among the five states, North Carolina offers the highest potential for

market entry through its active highway projects and upcoming procurements, specifically through its Monroe and Triangle Expressway projects. Focusing on states that express a strong interest for dynamic pricing and other technological solutions to reduced congestion, are favourable markets for A-to-Be as they increase the chances of securing opportunities and scale further in the market.

One recurring priority segment found through the analysis is States undergoing toll system modernization. Legacy systems, such as those in Washington and Florida, create opportunities for natural market entry as agencies are more likely to assess and consider the implementation of new technologies and innovative solutions as part of their modernization agenda. In these cases, A-to-Be can position its advanced tolling and dynamic pricing solutions as essential to comprehensive system improvements, offering added value to agencies seeking modern solutions and improved user experience across tolling infrastructure.

3.2.3 Organizational Capabilities to be Developed (Written by: Maria Valentina Arroyave Estupiñan)

To advance the implementation of dynamic pricing in the U.S., A-to-Be needs to strengthen several internal capabilities that are not yet fully developed, according to the gaps identified in the internal analysis. The preliminary analysis shows significant gaps in both technological and commercial readiness. Currently, A-to-Be does not have a live reference for a dynamic pricing system in operation, while other providers already have active deployments in the U.S. This absence reduces the company's credibility with agencies seeking proven experience for Express Lanes projects. There is also a technical gap, as A-to-Be does not yet have an integrated and validated dynamic pricing engine that can recalculate rates in real time (see Appendix 3). Moreover, the traffic information used by A-to-Be in other functions is not currently connected to an automatic minute-by-minute price update cycle, which is necessary to meet the standard offered by other providers.

Previous analyses also indicates that A-to-Be has a solid foundation in research, tolling technologies, and traffic management (e.g., TANGENT, MODALSHIFT), but these advances still need to be translated into commercial solutions ready for the U.S. market. This requires developing clearer internal processes to transition from research to execution, forming teams dedicated specially to dynamic pricing, and improving product governance to reduce risks in real projects.

Furthermore, the technical study describes several requirements needed to operate dynamic pricing, such as reliable sensors, high-frequency data, and traffic and behavior models, as noted in previous technical documents and studies on dynamic systems (Claudio Lombardi 2021). These elements must work together within an algorithmic engine that connects properly with central systems. To achieve this, A-to-Be needs to strengthen its capabilities in integration, data analysis, predictive modeling, and continuous operation of the pricing engine.

In addition, market studies show that agencies value transparency, ease of integration, and solutions that minimize operational risk, especially after documented failures in vendor implementations in different states (WSDOT 2022) . In this context, A-to-Be must reinforce its commercial capabilities, particularly in managing bids for toll agency RFPs, collaborating closely with local agencies and consultants (e.g., AECOM, HNTB), and developing low-risk pilots in Brownfield environments that demonstrate system reliability. Strengthening these capabilities will enable the company to establish a more competitive position in the dynamic pricing market.

3.2.4 Competitive Positioning of Dynamic Pricing (Written by: Maria Valentina Arroyave Estupiñan)

After considering the market entry strategies outlined above, the next step is to define how A-to-Be should be positioned dynamic pricing competitively within the U.S. market. A clear

positioning strategy is essential to differentiate the offering and to convert identified opportunities into actual deployments.

This positioning should build on the elements that distinguish the company within the mobility sector. As described in Chapter 2, its tolling and traffic management solutions that are characterized by modularity, interoperability, and the ability to operate in complex environments, which allows dynamic pricing to be framed as a natural extension of existing, proven technologies. This international trajectory contributes to perceived credibility and provides a foundation for communicating technical stability and operational maturity (A-to-Be 2025e).

In the U.S. context, competitive analysis shows that agencies often prioritize suppliers capable of integrating with existing systems and minimizing risks associated with technological migration. This is particularly relevant in Brownfield projects, where coexistence between new components and legacy platforms is a common requirement. The company can therefore position its offering by highlighting its modular architecture and “building blocks” approach, which enables dynamic pricing modules to be incorporated without requiring full system replacements or operational disruptions (A-to-Be 2025h).

Analysis of previous market failures also indicates that transparency and traceability in pricing decisions are decisive factors for agencies, which must justify rate adjustments to auditors, supervisors, and users. As such, positioning can emphasize configuration clarity and the ability to demostrate how toll values are generated in relation to traffic conditions. This aligns with the experience using platforms that already process and visualize real-time data, such as Atlas (A-to-Be Atlas TED). and corresponds to governance criteria noted in the regulatory analyses referenced in this work.

Dynamic pricing can also be presented not as an isolated feature but as part of a broader mobility platform. As noted in the technical analysis, the company already works in areas such as Road User Charging, advanced traffic management, GNSS sensors, and V2X technologies (A-to-Be RUC). Integrating dynamic pricing into this wider portfolio allows the company to convey that it addresses not only a corridor-level operational need but also supports agencies in their transition toward more connected, efficient, and sustainable mobility systems.

Overall, a competitive positioning can be structured around three core ideas, credibility derived from its international experience, compatibility with Brownfield environments enabled by a modular architecture, and a broader mobility vision in which dynamic pricing is integrated with existing capabilities in tolling, traffic data, and digital mobility services. These elements together allow dynamic pricing to be presented as a robust and adaptable solution aligned with the priorities of U.S. transportation agencies.

3.3 Expected Impact

3.3.1 Short-term and Long-term Revenue Uplift (Written by: Raquel Horta Dos Santos)

In the previous chapter a detailed financial analysis was conducted, including the identification of key revenue and cost drivers, namely *network coverage*, *traffic volume*, *vehicle mix*, and *technological adjustment and maintenance requirements*. Furthermore, a scenario analysis was also performed, indeed pessimistic, moderate, and optimistic scenarios were simulated. Lastly, and the evaluation of the evolution of gross profit over time under each scenario was also carried out. These assessments allow for a more comprehensive understanding of how this project may create an uplift in A-to-Be's revenue in short and long term.

The revenue uplift conclusions will be based on the moderate scenario only, as it represents the most balanced and realistic projection of project's performance. While the pessimistic and

optimistic scenarios are useful for testing uncertainty, the moderate scenario incorporates assumptions that align with historically observed traffic patterns, typical market behavior, and the central estimates used in the financial model. Therefore, it serves as the most reliable benchmark for estimating the project's expected revenue uplift.

As seen in table 16, the potential revenue of the project grows from 524 995,10€ in year 1 to 562 780,03€ in year 9, in the moderate scenario, which represents a growth of approximately 8% over 10 years.

In the short term (year 1 to year 3), revenue growth is not very accentuated, increasing from 524 995,10€ to 533 561,35€, which corresponds to an uplift of approximately 1,6%. However, this relatively modest revenue uplift is expected, reflecting both the typically stable evolution of traffic volumes and the gradual impact of implementing dynamic toll pricing.

On the other hand, on the long run (from year 4 onwards), the growth in revenue becomes slightly more accentuated reaching 562 780,03€ in year 9, for instance, which represents a growth of approximately 4,6% from year 4 to year 9. Although the growth remains relatively modest, it is nonetheless almost three times higher than the short-term revenue increase.

However, if the annual uplift is analyzed, it is possible to conclude that it remains constant at approximately 1%, which, once again, reflects the slow but steady increase in traffic volume.

Therefore, it is possible to conclude that the financial impact of implementing dynamic toll pricing in the U.S. for A-to-Be becomes increasingly significant over the long term. As the system matures, operational efficiencies improve, and pricing algorithms are refined, the project is expected to deliver stronger revenue gains. Over time, the technology will also become more closely tailored to users' needs and travel patterns, enhancing its effectiveness and allowing revenue-optimization mechanisms to fully develop. Hence, while short-term gains

may appear modest, the long-run outlook indicates a more substantial positive contribution to A-to-Be's revenue.

3.3.2 Customer Satisfaction and Experience Improvements (Written by: Raquel Horta Dos Santos)

A-to-Be's implementation of dynamic toll pricing in the U.S. is expected to significantly enhance customer satisfaction and overall user experience across several dimensions.

First, as seen in previous chapters, dynamic pricing enables a more efficient allocation of road capacity by adjusting tolls in real time based on real time traffic conditions, leading to smoother traffic flow, reduced congestion, and more predictable travel times. All of these represent logical drivers of user satisfaction on major highways and tolled roads. For instance, when drivers experience more predictable and reliable travel times, their perception of service quality increases substantially (consumerpolicyinstitute 2013).

Furthermore, by offering lower tolls in low traffic volume periods, the system provides cost-saving opportunities for price-sensitive drivers who can shift their travel times. Alternatively, for users who value reduced travel times and reliability, the ability to travel during peak hours with less congestion enhances the perceived value of the service. This way, dynamic toll pricing creates a more personalized experience where each user can make choices that best match their preferences, increasing perceived fairness and control.

Also, dynamic toll pricing encourages continuous improvements in traffic management technologies, such as more accurate monitoring systems, real-time communication tools, and enhanced user interfaces in mobile apps or electronic toll devices. These technological upgrades directly benefit drivers through clearer information, timely updates, and a more seamless travel experience. Improved transparency regarding pricing changes and expected travel speeds also strengthens user trust, as drivers feel better informed and more in control of their journey.

Indeed, a survey about the drivers' perspective on dynamic toll pricing revealed that when people are provided with a clear benefit derived from this technology, they are likely to support toll increases (National Capital Region Transportation Planning Board and Metropolitan Washington Council of Governments 2013).

Finally, over the long term, dynamic toll pricing contributes to a more sustainable and resilient transportation ecosystem. By incentivizing better traffic distribution, it reduces road wear, emissions, and stress on infrastructure. Users indirectly benefit from safer roads, fewer disruptions, and a more comfortable driving environment.

In fact, a survey published by the Bureau of Transportation Statistics shows that satisfaction regarding these factors is currently only around 60% (Bureau of Transportation Statistics, n.d.), indicating significant room for improvement. Thus, implementing dynamic toll pricing can help address these issues by better managing traffic flow, reducing congestion, and enhancing the overall driving experience.

In summary, customer satisfaction improves because dynamic toll pricing offers greater reliability, more choice, better information, and a smoother journey, contributing to an enhanced and more user-focused travel experience. By aligning operational efficiency with user-centric value, this project not only ensures improvements in A-to-Be's financial performance but also translates into enhancements in day-to-day driver experience.

3.3.3 How Does This Strengthen A-to-Be's Competitive Position? (Written by: Beatriz Isabel Martins Gonçalves)

The adoption of dynamic pricing strengthens A-to-Be's competitive position by directly addressing one of the most significant capability gaps identified throughout this research, the absence of an operational, market-validated dynamic pricing solution. As the analysis demonstrated, dynamic pricing is increasingly becoming a defining feature of next-generation

tolling systems in the U.S., particularly within managed lanes and congestion-charging programs. By developing and deploying an integrated, real-time pricing solution, supported by A-to-Be's existing tolling, back-office, and traffic management platforms, the company can reposition itself from a general tolling integrator to a technologically advanced mobility solutions provider capable of meeting market expectations.

Strengthening this capability not only closes a major competitive gap but also improves A-to-Be's ability to differentiate in a market dominated by established vendors with long-standing dynamic pricing references. Introducing a proven dynamic pricing solution allows A-to-Be to compete for high-value, innovation-driven procurements, particularly in the U.S. where congestion management and demand-responsive tolling are strategic priorities. In doing so, A-to-Be enhances its credibility, reduces perceived technological risk, and signals that it can deliver the complex, real time operational functionality that shapes procurement decisions.

Over time, successfully developing and deploying a dynamic pricing solution would give A-to-Be a clearer and more competitive position in the market. Having a validated dynamic pricing deployment would not only expand A-to-Be's portfolio with a highly visible and technologically advanced reference but also strengthen its credibility in future procurement processes. This deployment could generate valuable spillover effects across other strategic innovation areas, such as GNSS-based tolling, predictive traffic management, and the integration of tolling into Mobility-as-a-Service platforms, further reinforcing A-to-Be's role within an increasingly data-driven mobility ecosystem.

To conclude, dynamic pricing not only addresses a critical capability gap but also establishes A-to-Be as a credible, forward-looking competitor within one of the most technologically demanding segments of the tolling industry.

3.4 Conclusion (Written by: Beatriz Isabel Martins Gonçalves & Maria Valentina Arroyave Estupiñan)

This project aimed to analyze how A-to-Be can enter the U.S. dynamic toll pricing market by developing a strategy aligned with its technological capabilities and the specific conditions of this segment. Based on five research questions, the study combined internal analysis, market benchmarking, entry strategy formulation, implementation planning, and financial evaluation. Overall, Chapters 2 through 6 show that A-to-Be has relevant technological capabilities and a modular architecture well suited to brownfield environments, but also faces maturity gaps, a lack of operational references, and a highly competitive and sensitive institutional context.

The results indicate that, although technical, commercial, and regulatory barriers exist, A-to-Be can move forward with a strategy built on modularity, transparency, and collaboration with engineering consultants. Chapter 5 demonstrates that this approach can be implemented through a gradual roadmap and a low-risk pilot on the Monroe Expressway, while Chapter 6 shows that value creation depends on favorable demand conditions and controlled technology-related costs. Together, these findings suggest that A-to-Be's entry into the dynamic pricing market is feasible, provided it follows an incremental path of technical validation, internal capability development, and progressive strengthening of institutional credibility.

The study also has limitations linked to its methodological approach. The analysis relies on public information, internal documentation, and benchmarking exercises, as no operational data from an actual dynamic pricing pilot at A-to-Be is currently available. Similarly, the financial projections are based on assumptions and scenario modeling, which introduces uncertainty into the results. These constraints highlight the need for future research focused on field validation, analysis of real user behavior, and exploration of additional applications of dynamic pricing within advanced mobility systems. Despite these limitations, the study offers an integrated

strategic, operational, and financial perspective that can guide A-to-Be's future development and positioning in the U.S. dynamic pricing market.

This research shows that A-to-Be can integrate dynamic pricing into its business model through a phased approach that aligns traffic optimization objectives, sustainability goals, and strategic market positioning. From a traffic management perspective, dynamic pricing is integrated by leveraging A-to-Be's existing platforms to enable real-time demand regulation in brownfield environments. In sustainability terms, the solution reduces congestion as a mechanism for lowering emissions and supporting more efficient road usage. This positions dynamic pricing as a demand management tool instead of purely revenue driven. Strategically, integration occurs through incremental market entry through partnerships, pilot-based validation, and institutional credibility building, allowing A-to-Be to strengthen its competitive position without exposing the company to excessive risk. Together, these dimensions show that dynamic pricing integration is not a single technological deployment, but a coordinated process combining operational capabilities, policy alignment, and strategic execution. Beyond its relevance to A-to-Be, this research contributes to the broader literature on dynamic pricing adoption by demonstrating how modular architectures and incremental validation strategies can reduce institutional risk in brownfield mobility markets.

4 Bibliography

A-to-Be Mobility Technology, S.A. 2018. "A-to-Be and Globalvia Sign for Tolling Back Office in Pocahontas Parkway (U.S.)." Press release, January 15, 2018. https://www.a-to-be.com/wp-content/uploads/2020/09/PressRelease_PocahontasParkway_Backoffice.pdf.

A-to-Be, Mobility-Beyond. 2021. "The Future of Tolling." *A-to-Be White Paper*. https://www.a-to-be.com/wp-content/uploads/2021/05/A-to-Be-White-Paper-2-Future-of-Tolling-AET.pdf.

A-to-Be. 2017. "A-to-Be and IMS Selected for RUC Washington Program." A-to-Be. September 6, 2017. https://www.a-to-be.com/wp-content/uploads/2020/09/20170907_PressRelease_RUCWashingtonAward_draft0.1_EN.pdf

A-to-Be. 2018. "*A-to-Be and Globalvia Sign for Tolling Backoffice in Pocahontas Parkway."* Virginia: A-to-Be. https://www.a-to-be.com/wp-content/uploads/2020/09/PressRelease_PocahontasParkway_Backoffice.pdf

A-to-Be. 2019. "RUC". Internal document, Lisbon.

A-to-Be. 2020. "MoveBeyond Overview." Internal document, Lisbon.

A-to-Be. 2021. "*A-to-Be Enables Access to 2000-Point EV-Charging Network with Via Verde."* A-to-Be. November 30, 2021. Accessed November 17, 2025.https://www.a-to-be.com/wp-content/uploads/2021/11/A-to-Be-Enables-Access-to-2000-Point-EV-Charging-Network-with-Via-Verde.pdf

A-to-Be. 2023. *"A-to-Be to Provide MoveBeyond Backoffice System in the Netherlands."* Chicago: A-to-Be. https://www.a-to-be.com/wp-content/uploads/2023/01/A-to-Be-to-Provide-MoveBeyond-Backoffice-System-in-the-Netherlands.pdf

A-to-Be. 2023a. "Via Verde and A-to-Be are participating in the GEMINI Project." A-to-Be. July 26, 2023. https://www.a-to-be.com/new-project/via-verde-and-a-to-be-are-participating-in-the-gemini-project-to-develop-new-shared-mobility-services-for-the-next-decade/

A-to-Be. 2023b. "RfPs Overview". Internal Document, Lisbon.

A-to-Be. 2024. "Connecting the Dots - V2X White Paper." A-to-Be. May 28, 2024. Accessed November 18, 2025.https://www.a-to-be.com/wp-content/uploads/2024/05/Connecting-the-Dots_A-to-Be_WP.pdf

A-to-Be. 2024a. "Coast-to-Coast". Internal document, Lisbon.

A-to-Be. 2024b. “TED MLFF”. Internal document, Lisbon.

A-to-Be. 2024c. “Roadside Trends”. Internal document, Lisbon.

A-to-Be. 2024d. “Dynamic Pricing U.S.”. Internal document, Lisbon.

A-to-Be. 2025a. “Atlas One-pager”. Internal document, Lisbon.

A-to-Be. 2025b. “Atlas TED”. Internal document, Lisbon.

A-to-Be. 2025c. “Data Request”. Internal document, Lisbon.

A-to-Be. 2025d. “Innovation Roadmap”. Internal document, Lisbon.

A-to-Be. 2025e. “Introduction”. Internal document, Lisbon.

A-to-Be. 2025f. “LinkBeyond ORT”. Internal document, Lisbon.

A-to-Be. 2025g. “MoveBeyond TED”. Internal document, Lisbon.

A-to-Be. 2025h. “Quick Product Overview”. Internal document, Lisbon.

A-to-Be. 2025i. “TED MLFF U.S Edition”. Internal document, Lisbon.

A-to-Be. 2025j. “Vision for Mobility”. Internal document, Lisbon.

A-to-Be. 2025k. “TANGENT Platform and Possible Atlas Integrations”. Internal document, Lisbon.

A-to-Be. 2025l. “LinkBeyond One-pager”. Internal document, Lisbon.

A-to-Be. 2025n. “Dynamic Pricing Knowledge Base”. Internal document, Lisbon.

A-to-Be. 2025o. “MODALSHIFT Summary”. Internal document, Lisbon.

A-to-Be. 2025p. “RUC and Energy Transition”. Internal document, Lisbon.

A-to-Be. 2025q. “MoveBeyond One-pager.” Internal document, Lisbon.

A-to-Be. n.d. “About us.” A-to-Be. Accessed on November 3, 2025. https://www.a-to-be.com/about-us/

A-to-Be. n.d.a. “Tolling: Overview.” A-to-Be. Accessed October 30, 2025. https://www.a-to-be.com/tolling/

A-to-Be. n.d.b. “Electronic Tolling.” A-to-Be. Accessed October 30, 2025, https://www.a-to-be.com/tolling/electronic-tolling/

A-to-Be. n.d.c. “MaaS Platform,” A-to-Be. Accessed October 30, 2025. https://www.a-to-be.com/urban-mobility/maas-platform/

A-to-Be. n.d.d. “Road User Charge (RUC) Washington Program.” A-to-Be. Accessed October 30, 2025. https://www.a-to-be.com/project-reference/our-work/

AARoads. 2021. “U.S. 74 Bypass - Monroe Expressway.” 2021. AA Roads. December 1, 2021. https://www.aaroads.com/guides/us-074-bypass-monroe-expressway-nc.

AARoads. 2024. “State Road 570 - Polk Parkway.” AA Roads. May 18, 2024. https://www.aaroads.com/guides/fl-570.

AARoads. 2025. “Interstate 405.” 2025. AA Roads. September 18, 2025. https://www.aaroads.com/guides/i-405-wa#:~:text=Interstate%20405%20is%20an%20urban,Washington%20to%20Newcastle%20and%20Bellevue.

AECOM. 2023. “AECOM selected as Lead Designer for Washington State Department of Transportation’s I-405/Brickyard to SR 527 Improvement Project.” AECOM. September 6, 2023. https://aecom.com/press-releases/aecom-selected-as-lead-designer-for-washington-state-department-of-transportations-i-405-brickyard-to-sr-527-improvement-project/

AECOM. n.d. “North Carolina Turnpike Expressway Toll Operations.” AECOM. Accessed on November 18, 2025. https://aecom.com/projects/north-carolina-turnpike-triangle-expressway-toll-operations/

AECOM. n.d.a. “SR-91 Corridor Improvements.” AECOM. Accessed on November 18, 2025. https://aecom.com/projects/sr91corridorimprovements/

Alameda CTC. 2024. “Interstate 680 Sunol Express Lanes.” Alameda CTC. Accessed November 29, 2025. [1] https://www.alamedactc.org/wp-content/uploads/2024/12/1369000_I680-Sunol-EL_FS_20241202.pdf

Alameda CTC. n.d. “I-580 Express Lanes After Study: Report to the California State Legislature.” Oakland: Alameda CTC. https://www.alamedactc.org/wp-content/uploads/2018/10/580_Express_Lanes_After_Study_20181012.pdf

Alameda CTC. n.d.a “I-680 Sunol Express Lanes.” Projects and Programs. Accessed November 17, 2025. https://www.alamedactc.org/programs-projects/expresslanesops/680expresslanes

Andersson, Rickard. 2024. “*The Global GNSS-Based Road Pricing Market – 1st Edition*.” Gothenburg: Berg Insight AB, April 2024. https://media.berginsight.com/2024/04/04121349/bi-roadcharging1-ps.pdf.

Arnott, Richard, André de Palma, and Robin Lindsey. 1993. “A Structural Model of Peak-Period Congestion: A Traffic Bottleneck with Elastic Demand” *American Economic Review.* 83 (1) March: 161-179. https://www.jstor.org/stable/2117502

Artan, Yusuf, and Peter Paul. 2013. “Occupancy Detection in Vehicles Using Fisher Vector Image Representation.” Cornell University. December 20, 2013. https://arxiv.org/abs/1312.6024.

Atkinson Construction. n.d. “1-10/I-110 Metro ExpressLanes.” Atkinson Construction. Accessed November 17, 2025. https://www.atkn.com/our-work/projects/metro-expresslanes

Balaban, Dan. 2022. “New York’s MTA Says OMNY Rollout Falls Further Behind Schedule; Cites Vendor Quality Control Issues.” Mobility Payments. October 27, 2022. https://www.mobility-payments.com/2022/10/27/new-yorks-mta-says-omny-rollout-falls-further-behind-schedule-cites-vendor-quality-control-among-other-issues/.

Bay Area Express Lanes. 2019. “I-880 Express Lanes HOV Lane Conversion.” Bay Area Express Lanes. Accessed November 17, 2025. https://mtc.ca.gov/sites/default/files/I-880_Exp_Lanes_web_display.pdf

BCR. 2024. “1H 2024 Results Report.” BCR. Accessed on November 5, 2025. https://www.brisaconcessao.pt/Portals/0/BCR%20RI%201H2024%20EN.pdf

BCR. 2025a. “Tabela Escada Taxas 2025 (23 % IVA included).” Accessed on November 18, 2025.https://www.brisaconcessao.pt/Portals/0/TabelaEscadaTaxas_23iva_01012025_v1_1.pdf

Begley, Dug. 2023a. “Houston’s Smart Traffic Sign Network Faces Long Delays: Only 36 of 91 Signs Functioning.” Houston Chronicle. October 10, 2023a. Accessed November 18, 2025. https://www.houstonchronicle.com/news/houston-texas/transportation/article/houston-traffic-dynamic-message-signs-delays-18409048.php.

Begley, Dug. 2023b. “Just 36 of Houston’s 91 Smart Traffic Signs Are Functioning.” Governing Magazine. October 6, 2023b. Accessed November 18, 2025. https://www.governing.com/infrastructure/just-36-of-houstons-91-smart-traffic-signs-are-functioning.

Bid Banana / TheBidLab. 2025. *RFP: Tolling Back Office System Services (TBOS Rebid).* Accessed December 2025. https://bidbanana.thebidlab.com/bid/nUXuS772DL0mUGmq8bLL.

Borras, Kevin. 2025. “Q-Free Secures Major Tolling Contracts to Deploy Its Kinetic Mobility Advanced Traffic Management System.” 2025. Accessed November 17, 2025. https://highways-news.com/q-free-secures-major-tolling-contracts-to-deploy-its-kinetic-mobility-advanced-traffic-management-system/.

Brisa Group (2025) About Us – BCR Company Profile. *Accessed on November 5, 2025.* https://grupobrisa.pt/sobre-nos/empresas/bcr-brisa-concessao-rodoviaria/

Brisa Group. n.d. "A-to-Be – About us." Accessed on November 2, 2025. https://brisagroup.pt/about-us/companies/a-to-be

Bureau of Transportation Statistics. n.d. "National Highway User Survey." Coopers & Lybr and L.L.P Opinion Research Corporation. https://rosap.ntl.bts.gov/view/dot/4572/dot_4572_DS1.pdf.

Burenko, Stan. 2025. "How Much Does It Cost to Develop Software for a Project?" Uptech. November 9, 2025. https://www.uptech.team/blog/software-development-costs.

Burr & Forman LLP. 2024. "The Role of Brownfields in Economic Development: Turning Challenges into Opportunities." October 14, 2024. Accessed November 26, 2025. https://www.burr.com/newsroom/articles/the-role-of-brownfields-in-economic-development-turning-challenges-into-opportunities

California Department of Transportation. 2023. "I-5 Managed Lanes Project — Equity Study." May 2, 2023. Accessed November 19, 2025. https://dot.ca.gov/-/media/dot-media/district-12/documents/0q950-i-5-ml/ded-circulation-materials/technical-studies/i5_ml_equity_study_finaldraft_a11y.pdf.

Caltrans. n.d. "SM 101 Express Lanes Project." Caltrans. Accessed November 17, 2025. https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-san-mateo-101-express-lane-project

Caltrans. n.d.a. "101 Express Lanes FAQ: Project Design/General Questions." Caltrans. Accessed November 17, 2025. https://dot.ca.gov/caltrans-near-me/district-4/d4-projects/d4-san-mateo-101-express-lane-project/101-express-lanes-faqs-feb2021#faq-1

Caltrans. n.d.b. "Traffic Census Program." Caltrans. Accessed December 3, 2025. https://dot.ca.gov/programs/traffic-operations/census.

CDOT. n.d. "I-70 Express Lanes: Idaho Springs to Empire." Programs. Accessed November 17, 2025. https://www.codot.gov/programs/expresslanes/westboundi70

Clementson, Courtney. 2024. "*SR 125 Management Response to Investigation – Supporting Documents*." San Diego: SANDAG. 2024b. April 8, 2024. Accessed November 17, 2025. https://www.sandag.org/-/media/SANDAG/Documents/PDF/about/office-of-the-independent-performance-auditor/reports-and-documents/sr-125-management-response-to-investigation-supporting-documents.pdf.

Cline, Nathaniel. 2024. “Are Virginia Toll Roads Costly and Confusing? A State Study Shows Many Drivers Think So.” Virginia Mercury. June 20, 2024. Accessed November 19, 2025. https://virginiamercury.com/2024/06/20/are-virginia-toll-roads-costly-and-confusing-a-state-study-shows-many-drivers-think-so/.

Conduent Transportation. 2024a. “Conduent Implements I-64 Hampton Roads Express Lanes Tolling System for the Virginia Department of Transportation.” Accessed November 17, 2025. https://www.news.conduent.com/news/conduent-implements-i-64-hampton-roads-express-lanes-tolling-system-for-the-virginia-department-of-transportation/.

Conduent Transportation. 2024b. “Conduent Transportation Modernizes Ohio Turnpike’s Tolling Lanes to Improve Motorist Experience.” Accessed November 26, 2025. https://www.news.conduent.com/news/conduent-transportation-modernizes-ohio-turnpikes-tolling-lanes-to-improve-motorist-experience

Conduent Transportation. 2025a. “Tolling Solutions.” Accessed November 17, 2025. https://www.conduent.com/transportation-solutions/road-usage-charging/tolling-solutions/.

Conduent Transportation. 2025b. “Road Usage Charging.” Accessed November 17, 2025. https://www.conduent.com/transportation-solutions/road-usage-charging/.

Conduent Transportation. 2025c. “Commercial Back-Office Solutions for Transportation.” Accessed November 17, 2025. https://www.conduent.com/transportation-solutions/road-usage-charging/commercial-back-office-solutions/.

Conduent Transportation. 2025d. “Back-Office Processing Support.” Accessed November 17, 2025. https://www.conduent.com/automated-document-solutions/back-office-processing-support/.

consumerpolicyinstitute. 2013. “Drivers on Board With Dynamic Tolling.” Consumer Policy Institute. September 18, 2013. https://cpi.probeinternational.org/2013/09/18/drivers-on-board-with-dynamic-tolling/.

Cordeiro, Henrique. 2021. *“White Paper #2 - The Future of Tolling: All-Electronic Tolling: Saving the Environment, Your Wallet, and Your Time.”* United States: A-to-Be. https://www.a-to-be.com/project/future-of-tolling-series-wp-2-all-electronic-tolling-authorhenrique-cordeiro/

Cramer, William. 2015. “Texas Backlash Against Tolling.” March 17, 2015. https://www.ibtta.org/insights/texas-backlash-against-tolling

CTIO. 2022. "Request for Qualifications – Commercial Tolling Back-Office System and Operations." CDOT. June 22, 2022. Accessed November 2025. https://www.codot.gov/programs/ctio/assets/assets/back-office/ctio-bos-rfq-final_06-22-2022.pdf?utm

CTIO. 2023. "Colorado High-Performance Transportation Enterprise Tolling Policy." CDOT. Accessed November 2025. https://www.codot.gov/programs/ctio/assets/documents/ctio-tolling-policy-final-2023.pdf

Cubic Transportation Systems. 2015. “Cubic Awarded US$52 Million E-ZPass Back Office System Contract – New Hampshire.” November 3, 2015. Accessed November 17, 2025. https://www.cubic.com/news-events/news/cubic-awarded-52-million-e-zpass-back-office-system-contract-new-hampshire.

Cubic Transportation Systems. 2016. “*Tolling Solutions Brochure*.” Accessed November 17, 2025. https://www.cubic.com/sites/default/files/16-cts-brochure-tolling-AU%20UK-v2-FINAL-lo%20res%20single%20pages-web.pdf.

Cubic Transportation Systems. 2025a. “Transportation.” Accessed November 17, 2025. https://www.cubic.com/transportation.

Cubic Transportation Systems. 2025b. “Congestion Management.” 2025b. Accessed November 17, 2025. https://www.cubic.com/transportation/solutions/intelligent-transportation-solutions/congestion-management.

Cubic Transportation Systems. 2025c. “NHDOT Case Study: Creating a Seamless Road User Experience, New Hampshire E-ZPass Migration.” Accessed November 17, 2025. https://www.cubic.com/innovation/success-stories/nhdot-case-study-creating-seamless-road-user-experience-new-hampshire.

Daito, Nobuhiko, Zhenhua Chen, Jonathan L. Gifford, Tameka Porter, and John E. Gudgel. 2013. “Implementing Public–Private Partnerships During Challenging Economic Times: Case Study of the I-495 Express Lanes on the Virginia Portion of the Washington Capital Beltway Project (USA).” *Case Studies on Transport Policy* 1 (s1–2): 35–45. Accessed November 18, 2025. https://www.sciencedirect.com/science/article/abs/pii/S2213624X13000023.

Davis Polk. 2025. “New laws regulating algorithmic pricing enacted in New York and California.” Insights. Accessed October 27, 2025.

https://www.davispolk.com/insights/client-update/new-laws-regulating-algorithmic-pricing-enacted-new-york-and-california.

Deloitte. 2023. “A-to-Be and Deloitte Announce New Strategic Collaboration to Benefit Tolling Industry.” Deloitte. October 5, 2023. https://www.deloitte.com/us/en/about/press-room/a-to-be-and-deloitte-announce-new-strategic-collaboration-to-benefit-tolling-industry.html

Discenza, M. 2019. “495 and 95 Express Lanes: Keeping Virginia Moving.” George Mason University P3 Policy Lab. April 22, 2019. Accessed November 19, 2025. https://p3policy.gmu.edu/wp-content/uploads/2019/05/1_Discenza_20190422_GMUV1-Read-Only.pdf.

Duggan, Kevin. 2024. “MTA Demotes OMNY Contractor Cubic to Speed Up Commuter Rail Fare Integration.” *Streetsblog NYC*, May 20, 2024. Accessed November 18, 2025. https://nyc.streetsblog.org/2024/05/20/mtas-demotes-omny-contractor-cubic-in-hopes-of-speeding-up-commuter-rail-fare-integration/.

Dumas, Breck. 2025. “China-Linked Firms’ NJ Turnpike E-ZPass Contract Raises Security Concerns ‘Worse Than TikTok.’” *New York Post*, February 6, 2025. https://nypost.com/2025/02/06/business/china-linked-firms-nj-turnpike-e-zpass-contract-raises-security-concerns-worse-than-tiktok/

Edelstein, Robert. 2016. "On the Use of New Technologies to Enhance Infrastructure and Transportation Across the Country." U.S. Senate Committee on Commerce, Science, and Transportation. June 28, 2016. Accessed November 2025. https://www.commerce.senate.gov/services/files/F07AE0E1-D18D-40EF-9F0F-8962CD4E811E

Eliasson, Jonas, Lars Hultkrantz, Lena Nerhagen, Lena Smidfelt Rosqvist. 2009. “The Stockholm Congestion-Charging Trial 2006: Overview of Effects.” 43(3): 240-250. https://doi.org/10.1016/j.tra.2008.09.007

Entin, Brian, and Daniel Cohen. 2019. “TollGate: SunPass Users Say They’re Still Dealing With Billing Errors.” *WSVN 7News (Miami)*. May 6, 2019. https://wsvn.com/news/investigations/tollgate-sunpass-users-say-theyre-still-dealing-with-billing-errors/.

European Commission, CORDIS. 2021. “TANGENT: Cooperative Traffic Management for Optimized Transport Operations.”. Project ID 955273. March 26, 2021. Accessed November 18, 2025. https://cordis.europa.eu/project/id/955273

European Commission, CORDIS. 2025. “MODALSHIFT: Dynamic Incentives and Business Models for Sustainable Modal Shift”. Project ID 101203040. May 7, 2025. Accessed November 18, 2025. https://cordis.europa.eu/project/id/101203040

European Commission. n.d. “Horizon 2020: The EU Framework Programme for Research and Innovation”. Research and Innovation. Accessed November 18, 2025. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-2020_en

European Commission. n.d. “Initiatives.” Mobility and Transport. Accessed October 30, 2025. https://transport.ec.europa.eu/transport-themes/smart-mobility/road/initiatives_en

European Union Agency for the Space Programme (EUSPA). 2022. “*GNSS Adoption for Road User Charging: Existing and Planned Schemes in Europe*.” Brussels: EUSPA, 2022. Accessed November 18, 2025. https://www.euspa.europa.eu/sites/default/files/euspa_ruc_brochure.pdf.

Expresslanes.com. n.d. “More of what moves you: the 495 Express lanes extension is now open!” Express Lanes. Accessed November 17, 2025. https://expresslanes.com/495Extension

Farias, Valentina, Adriana, Shanjiang Zhu, and and Atabak Mardan. 2024. "An overview of dynamic pricing toll roads in the United States: Pricing algorithms, operation strategies, equity concerns, and funding mechanism." Case Studies on Transport Policy. 17. https://doi.org/10.1016/j.cstp.2024.101226

FasTrak. n.d. “Tolling in California.” Fastrak. Accessed on November 28, 2025. https://fastrak.org/tolling-in-ca/

FasTrak. n.d.a “Toll Locations - FasTrak.” FasTrak. Accessed December 3, 2025. https://www.bayareafastrak.org/en/home/toll-locations.shtml.

FDOT. 2019. "Review of SunPass Centralized Customer Service System." FDOT. November 22. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/info/co/news/newsreleases/11242019-sunpass-final–report.pdf

FDOT. 2025. “Dynamic Tolling on I-4 Express.” FDOT. February 14, 2025. https://i4express.com/wp-content/uploads/2025/02/I-4Express-Dynamic-Tolling-Handout-FINAL.pdf

FDOT. 2025a. “FDOT District 7 Dynamic Tolling.” Florida Statewide and Regional ITS Architectures. August 29, 2025. https://teo.fdot.gov/architecture/architectures/d7/html/projects/projarch49.html

FDOT. 2025b. “Annual Average Daily Traffic Historical TDA.” Open Data Hub. Accessed December 3, 2025. https://gis-fdot.opendata.arcgis.com/datasets/96c6f10bac1b4dd59115d5a5627bbd95_0/explore?location=27.607076%2C-83.790008%2C6.21.

FDOT. 2025c. “Truck Volume TDA.” n.d. https://gis-fdot.opendata.arcgis.com/datasets/truck-volume-tda/explore.

FDOT. n.d. “Managed Lanes Program.” FDOT. Accessed on November 28, 2025. https://www.fdot.gov/traffic/teo-divisions.shtm/cmt/managedlanes.shtm

FDOT. n.d.a. “Tampa Bay Next Projects: Projects Overview.” Tampa Bay Next. Accessed on November 28, 2025. https://www.tampabaynext.com/interstate-modernization/projects/

FDOT. n.d.b. “Tampa Bay Next Express Lanes: What are Express Lanes.” Tampa Bay Next. Accessed on November 28, 2025. https://www.tampabaynext.com/interstate-modernization/express-lanes/

FDOT. n.d.c. “I-275 Pinellas Corridor.” Tampa Bay Next. Accessed November 29, 2025. https://www.tampabaynext.com/projects/i-275-pinellas-corridor/

FDOT. n.d.d. “I-4 Corridor.” Tampa Bay Next. Accessed November 29, 2025. https://www.tampabaynext.com/projects/i-4-corridor/

Fernando, Jason. 2025. “Net Present Value (NPV): What It Means and How to Calculate It.” Investopedia. October 1, 2025. https://www.investopedia.com/terms/n/npv.asp.

Fernando, Jason. 2025a. “Internal Rate of Return (IRR): Formula and Examples.” Investopedia. September 23, 2025. https://www.investopedia.com/terms/i/irr.asp.

Ferrovial. n.d. “LBJ Express, TX.” Ferrovial. Accessed November 17, 2025. https://www.ferrovial.com/en/business/projects/lbj-expressway/?utm.

FHWA. 2005. “*Managed Lanes: A Primer*.” FHWA-HOP-05-031. U.S. Department of Transportation, 2005. Accessed November 19, 2025. https://ops.fhwa.dot.gov/publications/managelanes_primer/.

FHWA. 2013a. “*Priced Managed Lane Guide*.” FHWA-HOP-13-007. U.S. Department of Transportation. 2013a. Accessed November 19, 2025. https://ops.fhwa.dot.gov/publications/fhwahop13007/pmlg7_0.htm.

FHWA. 2013b. “*Priced Managed Lane Guide*.” FHWA-HOP-13-007. U.S. Department of Transportation, 2013b. Accessed November 19, 2025. https://ops.fhwa.dot.gov/publications/fhwahop13007/pmlg5_0.htm.

FHWA. 2017. *"Lessons Learned from Regional Congestion Pricing Workshops (RCPWs)."* FHWA-HOP-18-015. November, 2017. https://ops.fhwa.dot.gov/publications/fhwahop18015/fhwahop18015.pdf.

FHWA. 2020. "Priced Managed Lane Guide: Chapter 7 – Operations and Maintenance." FHWA. May 28. Accessed November 2025. https://ops.fhwa.dot.gov/publications/fhwahop13007/pmlg7_0.htm .

FHWA. 2021. "Value Pricing Pilot Program: Lessons Learned." Tolling and Pricing Program. April 15, 2021. https://ops.fhwa.dot.gov/publications/fhwahop08023/02summ.htm

FHWA. 2022a. "*Low-Income Equity Concerns of U.S. Road Pricing Initiatives*." Washington, DC: U.S. Department of Transportation, February 11, 2022. Accessed November 19, 2025. https://ops.fhwa.dot.gov/congestionpricing/resources/lwincequityrpi/.

FHWA. 2022b. "*Tolling & Pricing*." Accessed November 17, 2025. https://ops.fhwa.dot.gov/tolling_pricing/.

FHWA. 2022c. "Congestion Pricing: Environmental Benefits." FHWA. Accessed November 15, 2025. https://ops.fhwa.dot.gov/congestionpricing/resources/enviro_benefits.htm

FHWA. 2023. "Value Pricing Pilot Program (VPPP) FY 2022 Report to Congress ." U.S. Department of Transportation . September 22. https://ops.fhwa.dot.gov/congestionpricing/value_pricing/pubs_reports/rpttocongress/vppp22rpt/vppp22rpt.pdf

FHWA. 2023a. "Toll Facilities in the United States." Highway Policy Information. Accessed November 4, 2025. https://www.fhwa.dot.gov/policyinformation/tollpage/2001/page02.cfm.

FHWA. 2024. "Toll Facilities in the United States." Highway Policy Information. Accessed November 4, 2025. https://www.fhwa.dot.gov/policyinformation/tollpage/page02.cfm.

FHWA. 2024a. "Non-Interstate System Toll Roads in the United States." Office of Highway Policy Information. Accessed November 17, 2025. https://www.fhwa.dot.gov/policyinformation/tollpage/page09.cfm

FHWA. n.d. "Toll Roads in the United States: History and Current Policy." *Federal Highway Administration*. https://www.fhwa.dot.gov/policyinformation/tollpage/documents/history.pdf.

FHWA. n.d.a. "Conducting Procurement for Public-Private Partnerships (P3S)." Center for Innovative Finance Support. Accessed on November 17, 2025. https://www.fhwa.dot.gov/ipd/fact_sheets/p3_toolkit_06_conductingprocurement.aspx

FHWA. n.d.b “95 Express.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/fl_95_express.aspx

FHWA. n.d.c. “I-4 Ultimate.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/fl_i4ultimate.aspx

FHWA. n.d.d. “LBJ Express/IH 635 Managed Lanes.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/tx_lbj_express.aspx

FHWA. n.d.e. “Project Profile: North Tarrant Express 35W (Segments 3A, 3B and 3C).” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/tx_north_tarrant_3a3b.aspx

FHWA. n.d.f. “Project Profile: Katy Freeway Reconstruction.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/tx_katy_freeway.aspx

FHWA. n.d.g “Project Profile: US 36 Express Lanes (Phase 1).” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/co_us36_express_lanes.aspx

FHWA. n.d.h. “Project Profile: US 36 Express Lanes (Phase 2).” Center for Innovative Finance Support. Accessed November 17, 2025 https://www.fhwa.dot.gov/ipd/project_profiles/co_us36_express_lanes_phase2.aspx

FHWA. n.d.i. “Project Profile: C-470 Express Lanes.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/co_c470.aspx

FHWA. n.d.j. “Project Profile: Northwest Corridor.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/ga_northwest_corridor_project.aspx

FHWA. n.d.k. “SR 91 Corridor Improvement Project.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/ca_sr91_corridor.aspx

FHWA. n.d.l. “I-15 Express Lanes Project.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/ca_i15_express_lanes_project.aspx

FHWA. n.d.m. “I-77 Express Lanes.” Center for Innovative Finance Support. Accessed November 17, 2025. https://www.fhwa.dot.gov/ipd/project_profiles/nc_i77_express_lanes.aspx

FHWA. n.d.n “Project Profiles.” Centre for Innovative Finance Support. Accessed November 18, 2025. https://www.fhwa.dot.gov/ipd/tolling_and_pricing/project_profiles/

Financial Times. 2025. “New York City Congestion Pricing Brings New Revenue Stream to Public Transit.” April 2025. Accessed November 19, 2025. https://www.ft.com/content/dee50bc5-986a-4d4e-8663-d8cd644bec26.

Fisher, Tyson. 2019a. “Report Explains Everything That Went Down With SunPass Failure.” Land Line Media. 2019. Accessed November 17, 2025. https://landline.media/report-explains-everything-that-went-down-with-sunpass-failure/.

Fisher, Tyson. 2019b. “SunPass Debacle Leaves 120 Million Dollars of Unpaid Tolls on the Table in Florida.” *Land Line Media*, September 20, 2019. Accessed November 18, 2025. https://landline.media/sunpass-debacle-leaves-120m-of-unpaid-tolls-on-the-table-in-florida/.

FitchRatings. 2018. “Fitch Affirms SANDAGs South Bay Expressway Series 2017 Bonds ‘A-’; Outlook Positive.” FitchRatings. July 13, 2018. https://www.fitchratings.com/research/infrastructure-project-finance/fitch-affirms-sandags-south-bay-expressway-series-2017-bonds-a-outlook-positive-13-07-2018.

Florida Department of Transportation, Office of the Chief Inspector General. 2019. “*Review of SunPass Centralized Customer Service System (CCSS) #A-18/19-003*.” Executive Office of the Governor. November 22, 2019. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/info/co/news/newsreleases/11242019-sunpass-final--report.pdf.

Florida’s Turnpike Enterprise. n.d. “Electronic Toll Collection.” Florida’s Turnpike. Accessed December 3, 2025. https://floridasturnpike.com/tolls/electronic-toll-collection/#:~:text=Florida's%20Turnpike%20relies%20on%20cameras,establishes%20the%20appropriate%20toll%20amounts.

Florida’s Turnpike Enterprise. n.d.a “Florida’s Turnpike Enterprise Toll Rates.” Florida’s Turnpike. Accessed December 3, 2025. https://floridasturnpike.com/tolls/toll-rates/.

Frost, Adam. 2019. “TransCore to Build New York City’s Congestion Charging System.” TrafficTechnologyToday. 2019. Accessed November 17, 2025. https://www.traffictechnologytoday.com/news/emissions-low-emission-zones/transcore-to-build-new-york-citys-congestion-charging-system.html.

GDOT. n.d. “I-285 Top End Express Lanes.” GDOT. Accessed November 17, 2025. https://i285topendexpresslanes-gdot.hub.arcgis.com/

GDOT. n.d.a “SR 400 Express Lanes.” GDOT. Accessed November 17, 2025. https://0001757-gdot.hub.arcgis.com/

Georgia State University. 2022. “Trend Study: Understanding the Impacts of I-75 Express Lanes on Southeast Metro Atlanta Communities.” Georgia: Georgia State University. https://www.dot.ga.gov/DriveSmart/GEL/ExpressLanes/0015770_I-75SouthExpress_TrendRpt_2023-02-23.pdf

Georgia State University. 2022a. “Trend Study: Understanding the Impacts of I-85 Express Lanes on Northeast Metro Atlanta Communities.” Georgia: Georgia State University. https://www.dot.ga.gov/DriveSmart/GEL/ExpressLanes/0015771_I-85Extension_TrendRpt_2023-04-03.pdf

Georgia State University. 2022b. “Trend Study: Understanding the Impacts of Northwest Corridor Express Lanes on Northwestern Metro-Atlanta Communities.” Georgia: Georgia State University. https://www.dot.ga.gov/DriveSmart/GEL/ExpressLanes/0015772_NWC_TrendRpt_2023-02-23.pdf

Global Infrastructure Hub. 2020. “Dynamic Pricing Algorithms for Toll Roads.” Accessed November 17, 2025. https://www.gihub.org/infrastructure-technology-use-cases/case-studies/dynamic-pricing-algorithms-for-toll-roads/.

Global Market Insights. 2024. “Advanced Transportation Pricing System Market.” Accessed November 17, 2025. https://www.gminsights.com/industry-analysis/advanced-transportation-pricing-system-market.

GlobeNewswire. 2025. “TransCore Receives IBTTA Toll Excellence Award for Groundbreaking New York City Congestion Pricing System,” GlobeNewswire. September 9, 2025, https://www.globenewswire.com/news-release/2025/09/09/3147141/0/en/TransCore-Receives-IBTTA-Toll-Excellence-Award-for-Groundbreaking-New-York-City-Congestion-Pricing-System.html.

Gottheimer, Josh. 2025. “Gottheimer Sounds the Alarm Over China-Linked Company Operating NJ E-ZPass.” Press release, U.S. House of Representatives, February 2025. https://gottheimer.house.gov/posts/release-gottheimer-sounds-the-alarm-over-china-linked-company-operating-nj-e-zpass

Government Accountability Office. 2025. “Products.” December 11, 2025. Accessed November 26, 2025. https://www.gao.gov/products/

HigherGov. 2025. “Roadside Toll Technology – Contract Opportunity 2025-0811 for Washington State.” HigherGov. August 11, 2025. Accessed November 19, 2025. https://www.highergov.com/sl/contract-opportunity/wa-roadside-toll-technology-54557746/.

Hill, Adam. 2023. “A-to-Be has Via Verde’s back,” ITS International. January 31, 2023. https://www.itsinternational.com/its1/news/be-has-verdes-back

Hill, Adam. 2024. “Netherlands’ First Free-Flow Toll Road Opens.” ITS International December 13, 2024. https://www.itsinternational.com/news/netherlands-first-free-flow-toll-road-opens

HNTB. n.d. “I-15 Priced Managed Lanes: Sophisticated tolling system is world’s first fully dynamic variable-pricing corridor.” HNTB. Accessed on November 18, 2025. https://www.hntb.com/projects/i-15-priced-managed-lanes/

Hochul, Kathy. 2025. *Six Months In, Governor Hochul Highlights Success of Congestion Pricing: Traffic Is Down, Business Is Up, and Critical Investments Are Being Made to Improve Transit*. Office of the Governor of New York State, July 5, 2025. https://www.governor.ny.gov/news/six-months-governor-hochul-highlights-success-congestion-pricing-traffic-down-business-and

I-77 Express. n.d. “Pricing: Toll Rates.” I-77 Mobility Partners. Accessed on November 28, 2025. https://www.i77express.com/pricing/toll-rates/

I4Express.com. 2025. “Toll Collection - I4Express.com.” July 24, 2025. https://i4express.com/tolls/.

I4Express.com. n.d. “I-4 Express: There When You Need It.” I-4 Express. Accessed November 17, 2025. https://i4express.com/.

IBTTA. 2025. “2026 Call for Presentations – Finance, RUC & Managed Lanes Summit.” IBTTA. Accessed on November 17, 2025. https://www.ibtta.org/2026-call-presentations-finance-ruc-managed-lanes-summit

IBTTA. n.d. “About IBTTA.” IBTTA. Accessed on November 16, 2024. https://www.ibtta.org/about-us

IBTTA. n.d.a “Finance, RUC & Managed Lanes Summit.” Accessed November 20, 2025. https://www.ibtta.org/events/finance-ruc-managed-lanes-summit#overview.

IDOT. n.d. “Interstate 55 Managed Lanes.” IDOT. Accessed November 29, 2025. https://idot.illinois.gov/transportation-system/transportation-management/featured-projects/i55-managed-lane-study.html

Illinois Tollway. 2025. *“Our Bold Steps Together: Strategic Plan.”* Illinois: Illinois Tollway. p.20-21. https://agency.illinoistollway.com/documents/d/guest/illinois-tollway-strategic-plan_compressed

IMSA Safety. 2023. “Q-Free Brings Integrated Corridor Management to Kinetic Mobility.” IMSA. Accessed November 17, 2025.https://www.imsasafety.org/sustaining-member-news/q-free-brings-integrated-corridor-management-to-kinetic-mobility/.

ITE. n.d. “About ITE.” ITE. Accessed on November 17, 2025. https://www.ite.org/about-ite/about-ite/

ITS America Events. n.d. “ITS America Expo.” ITS America. Accessed November 20, 2025. https://www.itsamericaevents.com/expo/en-us.html

ITS America. n.d. “About ITS America.” ITS America. Accessed on November 17, 2025. https://itsa.org/aboutus/

ITS International. 2012a. “Cubic Highlights Its NextCity Urban Travel Payment and Information Platform.” ITS International. Accessed November 17, 2025. https://www.itsinternational.com/news/cubic-highlights-its-nextcity-urban-travel-payment-and-information-platform?page=49.

ITS International. 2012b. “Kapsch Wins Texas Tolling Projects.” ITS International. Accessed November 17, 2025.https://www.itsinternational.com/its1/news/kapsch-wins-texas-tolling-projects.

ITS International. 2012c. “TransCore Wins Contract for New HOV Express Lane Conversion.” *ITS International*. Accessed November 26, 2025. https://www.itsinternational.com/its1/news/transcore-wins-contract-new-hov-express-lane-conversion

ITS International. 2015. “Cubic Transportation Systems Re-Enters Tolling Market.” ITS International. November 3, 2015. Accessed November 17, 2025. https://www.itsinternational.com/its1/news/cubic-transportation-systems-re-enters-tolling-market.

Iwasinski, Adrianna, and Emilee Speck. 2019. “FDOT Inspector General Report Details Fallout from SunPass System Upgrade.” ClickOrlando. November 25, 2019. https://www.clickorlando.com/news/2019/11/25/fdot-inspector-general-report-details-fallout-from-sunpass-system-upgrade/.

Jansen, Bart. 2016. “Growth in Toll Traffic Outpaces Regular Roads.” USA TODAY. March 31, 2016. https://eu.usatoday.com/story/news/2016/03/31/growth-toll-traffic-outpaces-regular-roads/82472002/.

Jonkers, Eline, Jasper van Huis, and Diana Vonk Noordegraaf. 2015.“*Technology Options for Road Pricing*. Delft: TNO – Earth, Life & Social Sciences.” TNO. Accessed November 18, 2025. https://www.transportenvironment.org/uploads/files/2017_TNO_Technology_options_road_pricing.pdf.

Kapsch TrafficCom IVHS. 2012. “Kapsch TrafficCom IVHS Awarded North Tarrant Express and LBJ Express Projects in North Texas.” PR Newswire. July 30, 2012. Accessed November 17, 2025.https://www.prnewswire.com/news-releases/kapsch-trafficcom-ivhs-awarded-north-tarrant-express-and-lbj-express-projects-in-north-texas-164298166.html.

Kapsch TrafficCom. 2021. “Kapsch TrafficCom Wins Large Electronic Tolling Project in the USA.” BusinessWire. June 10, 2021. Accessed November 17, 2025. https://www.businesswire.com/news/home/20210610005324/en/Kapsch-TrafficCom-Wins-Large-Electronic-Tolling-Project-in-the-USA.

Kapsch TrafficCom. 2025.“Managed Lanes.” Accessed November 17, 2025. https://www.kapsch.net/en/tolling/managed-lanes.

Keep San Diego Moving. 2022. “North Coast Corridor Program.” SANDAG. February 2022. https://www.sandag.org/-/media/SANDAG/Documents/PDF/projects-and-programs/roads-and-highways/build-ncc/nortch-coast-corridor-fact-sheet-2022-02-11.pdf

LA Metro. 2022**.** *ExpressLanes Extension Project: Frequently Asked Questions*. Los Angeles. Accessed November 19, 2025. https://www.metro.net/documents/2025/01/10_expresslanes_extension_faq_spring2022pdf/

Lehe, Lucas. 2019. “Downtown congestion pricing in practice”. Accessed November 19, 2025. https://www.sciencedirect.com/science/article/abs/pii/S0968090X18306983

Leung, Shirley, Cory McCartan, CJ Robinson, Kiana Roshan Zamir, Mark Hallenbeck, and Vaughn Iverson. 2019. “*I-405 Express Toll Lanes: Usage, Benefits, and Equity”*. Seattle: University of Washington, eScience Institute, 2019. Accessed November 18, 2025.

https://depts.washington.edu/trac/research-news/freeway-and-arterial-management/i-405-express-toll-lanes-analysis-usage-benefits-and-equity/.

Lillerud, Anja. 2023. "GEMINI Project launched: EU-funded large-scale innovation action on new shared mobility services." Smart Innovation Norway. July 4, 2023. https://smartinnovationnorway.com/en/nyheter/gemini-project-launched-eu-funded-large-scale-innovation-action-on-new-shared-mobility-services/

Lombardi, Claudio, Luís Picado-Santos, and Anuradha M. Annaswamy. 2021. *"Model-Based Dynamic Toll Pricing: An Overview."* Applied Sciences. 11 (11): 4778. https://doi.org/10.3390/app11114778.

MarketsandMarkets. 2025. "*Electronic Toll Collection System Market — Global Forecast to 2030"*. MarketsandMarkets. Accessed November 19, 2025. https://www.marketsandmarkets.com/Market-Reports/electronic-toll-collection-system-market-224492059.html.

MDOT. n.d. "E-ZPass Express Lanes." E-ZPass. Accessed November 17, 2025. https://www.dot.state.mn.us/ezpassmn/expresslanes.html

Metastat Insight. n.d. "Electronic toll collection market report." Meta. August 5, 2025. Accessed on November 7, 2025. https://www.metastatinsight.com/report/electronic-toll-collection-market

Mower, Lawrence. 2019a. "Florida Fines Conduent $4.6 M over SunPass Tolling Snafus." Miami Herald, March 29, 2019a. https://www.miamiherald.com/news/state/florida/article228595424.html.

Mower, Lawrence. 2019b "*The Curious Circumstances That Led to the SunPass Debacle Were Years in the Making*." *Miami Herald*, April 1, 2019. PDF. https://gmx-way.com/static/disk/eyJfcmFpbHMiOnsibWVzc2FnZSI6IkJBaDdDVG9JYTJWNVNTSWxabVU0TmpBM05tUXpZakl6TkdObE9HSTFNVFk0TURCbU56QXpOalpqWldVR09nWkZWRG9RWkdsemNHOXphWFJwYjI1SklnSUdBV2x1YkdsdVpUc2dabWxzWlc1aGJXVTlJazFwWVcxcFgwaGxjbUZzWkY4dFgxUm9aVjlEVlZKSlQxVlRYME5KVWtOVlRWTlVRVTVEUlZOZmRHaGhkRjlzWldSZmRHOWZkR2hsWDFOMWJsQmhjM05mWkdWaVlXTnNaVjkzWldSZmRHOWZkR2hsWDNOMWJsQmhjM05mWkdWaVlXTnNaVjl0WVd0cGJtZGZMVjlCY0hKcGJGOHlNUzV3WkdZaU95Qm1hV3hsYm1GdFpTbzlWVlJHTFRnbkowMXBZVzFwWDBobGNtRnNaRjh0WDFSb1pWOURWVkpKVDFWVFgwTkpVa05WVFZOVVFVNURSVk5mZEdoaGRGOXNaV1JmZEc5ZmRHaGxYMU4xYmxCaGMzTmZaR1ZpWVdOc1pWOTNaWEpsWDNsbFlYSnpYMmx1WDNSb1pWOXRZV3RwYm1kZkxWOUJjSEpwYkY4eU1TNXdaR1lHT3daVU9oRmpiMjUwWlc

1MFgzUjVjR1ZKSWhSaGNIQnNhV05oZEdsdmJpOXdaR1lHT3daVU9oRnpaWEoyYVdObFgyNWhiV1U2Q214dlkyRnMi.

Mower, Lawrence. n.d. "One Florida Agency Rejected the Troubled SunPass Vendor Three Years Ago. Here's Why." Tampa Bay Times. Accessed November 18, 2025. https://www.tampabay.com/news/transportation/One-Florida-agency-rejected-the-troubled-SunPass-vendor-three-years-ago-Here-s-why-_170357879/.

National Capital Region Transportation Planning Board and Metropolitan Washington Council of Governments. 2013. "What Do People Think About Congestion Pricing?: A Study of the Public Acceptability of Congestion Pricing Through a Deliberative Dialogue with Residents of Metropolitan Washington." January 2013. https://www.mwcog.org/file.aspx?D=mk3AkgfPBPvijoJlBlc5tJNGdjrGknn0zD0dDc0lLlE%3d&A=kB3QDd7nAJYm%2fY1qFvIInVPTT12NLNiPNne2JQbrpM0%3d.

NC First Commission. 2020. *"The Future of Tolling in North Carolina."* Edition 10. North Carolina: NCDOT. Accessed October 2025 https://www.ncdot.gov/about-us/how-we-operate/finance-budget/nc-first/Documents/nc-first-brief-edition-10.pdf

NC First Commission. 2021. "Commission Findings." NCDOT. January 8, 2021. https://www.ncdot.gov/about-us/how-we-operate/finance-budget/nc-first/Documents/2021-01-08-key-findings.pdf

NC Quick Pass. 2025. "Monroe Expressway Toll Schedule." 2025. NC Quick Pass. 2025. https://www.ncquickpass.com/app/uploads/2025/01/Monroe-Expressway-Toll-Schedule-2025.pdf.

NC Quick Pass. 2025a. "Roads & Rates - NC Quick Pass." 2025. NC Quick Pass. June 19, 2025. https://www.ncquickpass.com/roads-rates/.

NCDOT. 2019. "Monroe Expressway." 2019. North Carolina Department of Transportation. December 19, 2019. https://www.ncdot.gov/projects/monroe-expressway/Pages/default.aspx.

NCDOT. 2024. "Toll Operations." NCDOT. June 21, 2024. https://www.ncdot.gov/divisions/turnpike/Pages/toll-operations.aspx

NCDOT. 2025. "Turnpike Projects." NCDOT. January 21, 2025. https://www.ncdot.gov/divisions/turnpike/turnpike-projects/Pages/default.aspx

NCDOT. 2025a. "I-485 Express Lanes." NCDOT. October 22, 2025. https://www.ncdot.gov/projects/i-485-express-lanes/Pages/default.aspx

NCDOT. n.d. “Traffic Monitoring Reports, Statistics & Resources.” https://connect.ncdot.gov/resources/State-Mapping/Pages/Traffic-Monitoring-Reports-Statistics.aspx.

NCDOT. n.d.a Doing Business with NCTA . Accessed November 2025. https://connect.ncdot.gov/business/Turnpike/Pages/default.aspx

NCDOTcommunications. 2018. “Monroe Expressway How Tolling Works.” https://www.youtube.com/watch?v=70J5ZTIuMu0.

NCTA. 2021. "I-485 Express Lanes Roadside Toll Collection System: Request for Proposals." NCTA – North Carolina Turnpike Authority. April 14. https://connect.ncdot.gov/business/Turnpike/ProcurementsLibrary/RTCS485_RFP.pdf

NCTA. 2024. “Operational Statistics Report for the Monroe Expressway First Quarter, January - March 2024.” https://www.ncdot.gov/divisions/turnpike/investor/Documents/monex-roadway-operations-2024-q1.pdf.

NCTA. 2025. “Operational Statistics Report for the Monroe Expressway First Quarter, January - March 2025.” https://www.ncdot.gov/about-us/board-offices/boards/turnpike-authority/Documents/2025-05-22-monroe-expressway-Q1-operations-statistics-report.pdf.

NCTA. 2025a. “NCTA Procurement Roadmap.” North Carolina Turnpike Authority. November 24, 2025. https://connect.ncdot.gov/business/Turnpike/Documents/NCTA%20Procurement%20Roadmap_Nov%20%2725.pdf

NCTA. 2025b. “Annual Comprehensive Financial Report.” North Carolina: NCTA. https://www.ncdot.gov/divisions/turnpike/investor/Documents/2025-ncta-acfr.pdf

Neology. 2024. “Neology Awarded First-of-Its-Kind Tolling-as-a-Service Contract by Plenary Roads Denver.” Neology. July 16, 2024. https://neology.com/news/neology-awarded-first-of-its-kind-tolling-as-a-service-contract-by-plenary-roads-denver/.

Neology. 2025a. “Electronic Toll Collection Solutions.” Neology. Accessed November 17, 2025, https://neology.com/solutions/electronic-toll-collection/.

Neology. 2025b. “Neology Awarded Eight-Year, $20 Million Contract with Tampa Hillsborough Expressway Authority” Neology. Accessed November 17, 2025, https://neology.com/news/neology-awarded-eight-year-20-million-dollar-contract-with-tampa-hillsborough-county-expressway-authority-in-florida/.

News Service of Florida. 2019. “Florida Will Cut Ties With Troubled SunPass Contractor.” WUSF Public Media, July 11, 2019, 7:59 a.m. EDT. Accessed November 18, 2025. https://www.wusf.org/news/2019-07-11/florida-will-cut-ties-with-troubled-sunpass-contractor

Nielsen, Paul. 2019. “Monroe Expressway nets 1M transactions in first month.” The Charlotte Weekly. January, 2019. https://www.thecharlotteweekly.com/mmhweekly/monroe-expressway-nets-1m-transactions-in-first-month/article_c1d03c09-3a3e-5a03-a61e-a4426bd843d3.html.

North Highland Consulting. n.d. “The Hidden Challenges of Modernizing Tolling Back-Office Systems.” North Highland. Accessed November 18, 2025. https://northhighland.com/insights/blogs/the-hidden-challenges-of-modernizing-tolling-back-office-systems-and-how-to-get-it.

North Carolina Department of Transportation. 2025. *Request for Information (RFI) for Next Generation Roadside Toll Collection System.* Accessed December 2025. https://www.rfpmart.com/984377-usa-north-carolina-rfi-for-next-generation-roadside-toll-collection-system-rfp.html.

Office of the Washington State Auditor. 2022. “Performance Audit: WSDOT Toll Collection System Replacement Project.” 1031381. Olympia: Auditor of State. December 6, 2022. Accessed November 18, 2025. https://sao.wa.gov/sites/default/files/2023-04/WSDOT_Tolling_System_Replacement_ar-1031381.pdf.

Pathena. n.d. “Solutions: SW provider of intelligent transport systems and mobility solutions.” Accessed on November 2, 2025. https://www.pathena.com/projects/solutions-sw-provider-of-intelligent-transport-systems-and-mobility-solutions

Payne, William. 2025. “NYC Adopts TransCore Congestion Pricing,” *IoT M2M Council*, February 4, 2025, accessed November 17, 2025, https://www.iotm2mcouncil.org/iot-library/news/smart-cities-news/nyc-adopts-transcore-congestion-pricing/

Peach Pass. n.d. “I-85 and I-85 Extension Express Lanes.” Peach Pass. Accessed November 17, 2025. https://peachpass.com/travel-the-express-lanes/i-85-and-i-85-ext/#:~:text=The%20I%2D85%20Extension%20Express,occupant%20vehicles%20for%20a%20fee

Peach Pass. n.d.a “I-75 South Metro Express Lanes.” Peach Pass. Accessed November 17, 2025. https://peachpass.com/travel-the-express-lanes/i-75-south-metro-express-lanes

Peach Pass. n.d.b. “I-75 Northwest Corridor.” Peach Pass. Accessed November 17, 2025. https://peachpass.com/travel-the-express-lanes/northwest-corridor/?tab=akers-mill-tab

Poole, Robert W., and C. Kenneth Orski. 2022. “*Converting HOV Lanes to HOT Lanes: Frequently Asked Questions*.” Los Angeles: Reason Foundation. Accessed November 18, 2025. https://reason.org/wp-content/uploads/convert-hov-lanes-to-hot-lanes-express-lanes.pdf.

Poole, Robert W., Jr. 2011a. “*Automating HOT Lanes Enforcement*.” Policy Study 390. Los Angeles: Reason Foundation. Accessed November 18, 2025. https://reason.org/policy-study/automating-hot-lanes-enforcement/.

Poole, Robert W., Jr. 2011b. “*Automating HOT Lanes Enforcement*.” Policy Study 390. Los Angeles: Reason Foundation. Accessed November 18, 2025. https://www.ibtta.org/sites/default/files/Automating%20HOT%20lanes%20enforcement%20Reason%20Foundation.pdf.

Poole, Robert. 2020. “*The Impact of HOV and HOT Lanes on Congestion in the United States: Discussion Paper*.” ITF Roundtable Discussion Paper 183. Paris: International Transport Forum / OECD Publishing. Accessed November 18, 2025. https://www.oecd.org/content/dam/oecd/en/publications/reports/2020/09/the-impact-of-hov-and-hot-lanes-on-congestion-in-the-united-states_67233cf8/0b353b17-en.pdf.

Procopio, Cory, Hargreaves & Savitch LLP. 2024. “Innovative Mobility Solutions Provider Secures Significant Tolling Contracts in Colorado and Georgia.” July 19, 2024. https://www.procopio.com/resource/neology-colorado-georgia-contracts.

Puterski, Steve. 2024. “SANDAG Audit Shows $2 M in Losses from Faulty Toll Road.” North County Daily Star. March 26, 2024. Accessed November 17, 2025. https://northcountydailystar.com/sandag-audit-shows-2m-in-losses-from-faulty-toll-road/.

Q-Free. 2024. “Q-Free Selected for I-485 Express Lane Project.” Q-Free. June 4, 2024. Accessed November 17, 2025. https://www.q-free.com/q-free-selected-for-i-485-express-lane-project/.

Q-Free. 2025. “Q-Free Secures Major Tolling Contracts to Deploy Its Kinetic Mobility Advanced Traffic Management System.” Q-Free. Accessed November 17, 2025. https://www.q-free.com/q-free-secures-major-tolling-contracts-to-deploy-its-kinetic-mobility-advanced-traffic-management-system/.

RCTC. n.d. “Interstate 15 Express Lanes Project.” RCTC. Accessed November 17, 2025. https://www.rctc.org/projects/15-express-lanes-project/

RCTC. n.d.a. “Interstate 15 Express Lanes Project Southern Extension.” RCTC. Accessed November 29, 2025. [2] https://www.rctc.org/projects/i15-express-southern-extension/

Ride66express.com. 2025. “Revolutionizing Mobility: The Success of the 66 Express Outside the Beltway.” 66 Express. February 4, 2025. https://ride66express.com/news/revolutionizing-mobility-the-success-of-the-66-express-outside-the-beltway/#:~:text=The%2066%20Express%20has%20also,of%20innovative%20public%2Dprivate%20partnerships.

Road User Charging Conference. n.d. “Neology Awarded £20m Contract with THEA.” Accessed November 17, 2025. https://www.roaduserchargingconference.co.uk/road-user-charging/neology-awarded-20m-contract-thea/.

Ruby, Courtney. 2024b. *“Office of the Independent Performance Auditor’s Investigation Report on SANDAG’s State Route 125 Toll Operations.”* San Diego: Office of the Independent Performance Auditor. https://www.sandag.org/about/-/media/13DAC8E1C1D7483FBA7A2A1F58DCCF25.ashx

Ruby, Courtney. 2024a. “*Whistleblower Investigation Report on SR-125 BOS Implementation*.” San Diego: Office of the Independent Performance Auditor. https://www.sandag.org/-/media/SANDAG/Documents/PDF/about/office-of-the-independent-performance-auditor/reports-and-documents/oipa-whistleblower-investigation-report-on-sr-125-bos-implementation-2024-10-07.pdf.

Ryzhokhin, Andrii. 2024. *Dynamic Pricing Models in SaaS: A Comparative Analysis of AI-Powered Monetization Strategies*. March 4, 2024. Working paper. ResearchGate. https://www.researchgate.net/publication/394873614_Dynamic_Pricing_Models_in_SaaS_A_Comparative_Analysis_of_AI-_Powered_Monetization_Strategies

Saeidi, Mahsa. 2025. “Residents Hit with Incorrect Congestion Pricing Charges after Exiting Garages.” CBS News New York. October 6, 2025. Accessed November 18, 2025. https://www.cbsnews.com/newyork/news/manhattan-residents-congestion-pricing-tolls-errors/.

SANDAG. n.d. “SANDAG - FasTrak.” SANDAG. Accessed on December 3, 2025. https://www.sandag.org/projects-and-programs/roads-and-highways/fastrak#:~:text=SR%20125%20Toll%20Road,-The%20SR%20125&text=All%20drivers%20on%20the%20toll,distance%20traveled%20and%20payment%20method.

SB Express Lanes. n.d. “Map & Pricing.” Accessed November 2025. https://www.sbexpresslanes.com/map-toll-rates/.

SBCTA. 2025. “I-15 Corridor Freight and Express Lanes Project.” SBCTA. Accessed November 29, 2025. https://www.gosbcta.com/wp-content/uploads/2025/03/I-15-ExpLanes-Fact-Sheet_031125-v2.pdf

SBCTA. n.d. “I-10 Express Lanes: Project Overview.” SBCTA. Accessed November 17, 2025. https://www.gosbcta.com/project/i-10-corridor-project-phase-i/

Shiklo, Borris, and Andy Lipnitski. n.d.“Software Maintenance and Support [+Cost Calculator].” ScienceSoft Software Development. https://www.scnsoft.com/software-development/maintenance-and-support.

Small, Kenneth, and Erik Verhoef. 2007. *The Economics of Urban Transportation*. 2nd ed. London: Taylor & Francis Group. https://doi.org/10.1016/j.scitotenv.2013.01.074

Statista. 2024. “Highway Construction & Infrastructure.” Statista. Accessed November 26, 2025. https://www.statista.com/topics/2148/highway-construction/.

TANGENT. 2025. “D7.4 Assessment of the Testing Results in the Case Study of Lisbon”. Internal Document. Project deliverable (D7.4), Lisbon.

TANGENT Project. n.d. “TANGENT Project Website.” TANGENT. Accessed November 18, 2025. https://tangent-h2020.eu/

Texpress. n.d. “NTW 35W TEXPress Lanes.” TExpress Lanes. Accessed November 17, 2025. https://www.texpresslanes.com/projects/nte35w/.

Times of San Diego. 2024. “SANDAG Audit Outlines ‘Blatant Errors’ That ‘Shortchange Commuters’ on SR-125 Toll Road.” Politics. March 29, 2024.Accessed November 17, 2025. https://timesofsandiego.com/politics/2024/03/29/sandag-audit-outlines-blatant-errors-that-shortchange-commuters-on-sr-125-toll-road/

Toll Roads News. 2025. “Tacoma Narrows Bridge Tolling System Upgraded with TransCore’s Next Generation Technology.” Accessed November 17, 2025. https://tollroadsnews.com/mailbag/tacoma-narrows-bridge-tolling-system-upgraded-with-transcores-next-generation-technology/.

TransCore. 2025a. “Tolling.” Accessed November 17, 2025. https://transcore.com/tolling.

TransCore. 2025b. “Home Page.” Accessed November 17, 2025. https://transcore.com/.

TransCore. 2025c. “Projects” Accessed November 17, 2025, https://transcore.com/projects.

TransCore. 2025d. “MTA and TransCore Pioneer First Congestion Pricing Solution in the U.S.,” January 27, 2025. Accessed November 17, 2025, https://transcore.com/mta-and-transcore-pioneer-first-congestion-pricing-solution-in-the-u-s.html.

TransCore. 2025e. “Congestion Pricing.” Accessed November 17, 2025, https://transcore.com/congestion-pricing.

TransCore. 2025f. “TransCore Serves as Integrator for Silicon Valley’s New HOV Lane Conversion to Express Lanes.” accessed November 17, 2025. https://transcore.com/transcore-serves-as-integrator-for-silicon-valleys-new-hov-lane-conversion-to-express-lanes.html.

TransCore. n.d. “Infinity Express – Actively Managing Congestion in More Than 600 Miles of Express Lanes.” Accessed November 19, 2025. https://transcore.com/tolling/infinity-express.

Transport for London. 2008. “*Central London Congestion Charging Impacts Monitoring – Sixth Annual Report*.” London: Transport for London. Accessed November 19, 2025. https://content.tfl.gov.uk/central-london-congestion-charging-impacts-monitoring-sixth-annual-report.pdf.

Transportation Corridor Agencies. 2025. “241/91 Express Connector Project.” The Toll Roads. September 23, 2025. https://thetollroads.com/media/c5ylx2ch/241-91-factsheet.pdf

Transurban. 2025. “About Us.” Accessed November 26, 2025. https://www.transurban.com/about-us.

Transurban. n.d. “North America.” Transurban. Accessed on November 17, 2025. https://www.transurban.com/roads-and-projects/north-america#fredericksburgextension.

Turner & Townsend, and Global Infrastructure Hub. 2018. “*I-495 Express Lanes, USA: Case Study*.” Global Infrastructure Hub. Accessed November 18, 2025. https://content.gihub.org/live/media/1436/gih_casestudy_usa_i-495-express-lanes.pdf.

Turnpikes.com. n.d. “Polk Parkway Map.” Turnpikes.Com. Accessed December 3, 2025. https://www.turnpikes.com/florida/maps/roads/?name=polk-parkway#exit-lists.

USDOT. 2008. *“Managed Lanes: a primer.”* EDL 14110. Washington, DC: USDOT. https://ops.fhwa.dot.gov/publications/managelanes_primer/managed_lanes_primer.pdf

USDOT. 2010. “MnPASS Express Lanes – I-394, Minneapolis, HOV to HOT Conversion Project.” Version 1. Minneapolis: USDOT.

https://ops.fhwa.dot.gov/freewaymgmt/publications/documents/nrpc0610/workshop_materials/case_studies/minneapolis_i394.pdf

USDOT. 2014. "South Bay Expressway (SR-125), San Diego, CA." United States Department of Transportation. September 9, 2014. https://www.transportation.gov/buildamerica/projects/project-highlights/south-bay-expressway-sr-125-san-diego-ca.

USDOT. 2023. "U.S. Department of Transportation Approves $501 Million Loan for I-25 Express Lane Expansion in Colorado." USDOT. August 8, 2023. https://www.transportation.gov/briefing-room/us-department-transportation-approves-501-million-loan-i-25-express-lane-expansion

USDOT. n.d. "I-595 Corridor Roadway Improvements." Build America Bureau. Accessed November 17, 2025. https://www.transportation.gov/buildamerica/projects/i-595-corridor-roadway-improvements

USDOT. n.d.a "I-25 Express Lanes in Colorado." Build America Bureau. Accessed November 17, 2025. https://www.transportation.gov/buildamerica/projects/i-25-express-lanes-colorado

USDOT. n.d.b "SR 400 Express Lanes Project." Build America Bureau. Accessed November 17, 2025. https://www.transportation.gov/buildamerica/projects/sr-400-express-lanes-project

USDOT. n.d.c "I-64 Hampton Roads Express Lanes Project." Build America Bureau. Accessed November 17, 2025. https://www.transportation.gov/buildamerica/projects/i-64-hampton-roads-express-lanes-project-segment-4c

USDOT. n.d.d "SR-91 Express Lanes, Orange County, CA." Build America Bureau. Accessed November 17, 2025. https://www.transportation.gov/buildamerica/projects/project-highlights/sr-91-express-lanes-orange-county-ca

VDOT. 2025. "Transform 66 Inside the Beltway." VDOT. August 19, 2025. https://www.vdot.virginia.gov/projects/major-projects/transform66/transform66-inside/.

VTA. n.d. "Silicon Valley Express Lanes Program." Santa Clara Valley Transportation Authority. Accessed on November 28, 2025. https://www.vta.org/programs/silicon-valley-express-lanes

VTA. n.d.a. “US 101 and State Route 85 Express Lanes Project (Phase 4).” VTA. Accessed November 29, 2025. https://www.vta.org/projects/us-101-and-state-route-85-express-lanes-project-phase-4

VTA. n.d.b. “US Express Lanes Project (Phase 5).” VTA. Accessed November 29, 2025. https://www.vta.org/projects/us-101-express-lanes-project-phase-5

Weiser, Scott. 2024. Colorado Uses Dynamic Tolling to Improve Travel Times . November 12. https://www.govtech.com/transportation/colorado-uses-dynamic-tolling-to-improve-travel-times

WSDOT. 2011. *I-405/SR 167 Corridor Express Toll Lanes Expert Review Panel: Executive Summary*. Olympia, WA: Washington State Department of Transportation. https://wsdot.wa.gov/sites/default/files/2021-11/ERPExecSum010411FIN1.pdf.

WSDOT. 2024. “*2024 Highway System Plan.*” Olympia: WSDOT. https://digitalarchives.wa.gov/do/0293945966FB5C1AAB408EA4681EEE52.pdf.

WSDOT. 2025. “Traffic Count Data | WSDOT.” 2025. October 1, 2025. https://wsdot.wa.gov/about/transportation-data/travel-data/traffic-count-data.

WSDOT. n.d. “I-405 Express Toll Lanes.” Olympia, WA: Washington State Department of Transportation. Accessed November 19, 2025. https://wsdot.wa.gov/travel/roads-bridges/toll-roads-bridges-tunnels/i-405-express-toll-lanes.

WSDOT. n.d.a. “I-405/Brickyard to SR 527 Improvement Project.” Construction & Planning. Accessed November 29, 2025. https://wsdot.wa.gov/construction-planning/search-projects/i-405sr-522-vicinity-sr-527-express-toll-lanes-improvement-project

WSDOT. n.d.b. “I-405/Renton to Bellevue Widening and Express Toll Lanes Project.” Construction & Planning. Accessed November 29, 2025. https://wsdot.wa.gov/construction-planning/search-projects/i-405renton-bellevue-widening-and-express-toll-lanes-project

WSDOT. n.d.c. “Washington State Department of Transportation.” WSDOT. Accessed November 29, 2025. https://wsdot.wa.gov/sites/default/files/2021-08/ASOP.pdf

WSDOT. n.d.d. “SR 167 Corridor Improvements Project.” WSDOT. Accessed on November 17, 2025. https://wsdot.wa.gov/construction-planning/search-projects/sr-167toll-upgrade-project

WSDOT. n.d.e. I-405/SR 167 Corridor Program. Accessed November 2025. https://wsdot.wa.gov/construction-planning/major-projects/i-405sr-167-corridor-program

WSDOT. n.d.f. “Toll Road Map.” n.d. WSDOT. Accessed December 3, 2025. https://www.mygoodtogo.com/EN/learn/toll-roads/toll-rates.

WSTC. 2025. “*2025 Annual Tolling Report & Tacoma Narrows Bridge Loan Update.*” Washington State: WSTC. https://wstc.wa.gov/wp-content/uploads/2025/01/2025-0110-2025AnnualTollingReport.pdf.

WSTC. n.d. “2025 I-405/SR 167 Toll Rate Setting.” Accessed November 19, 2025. https://wstc.wa.gov/programs/tolling/2025-i-405-sr-167-toll-rate-setting/.

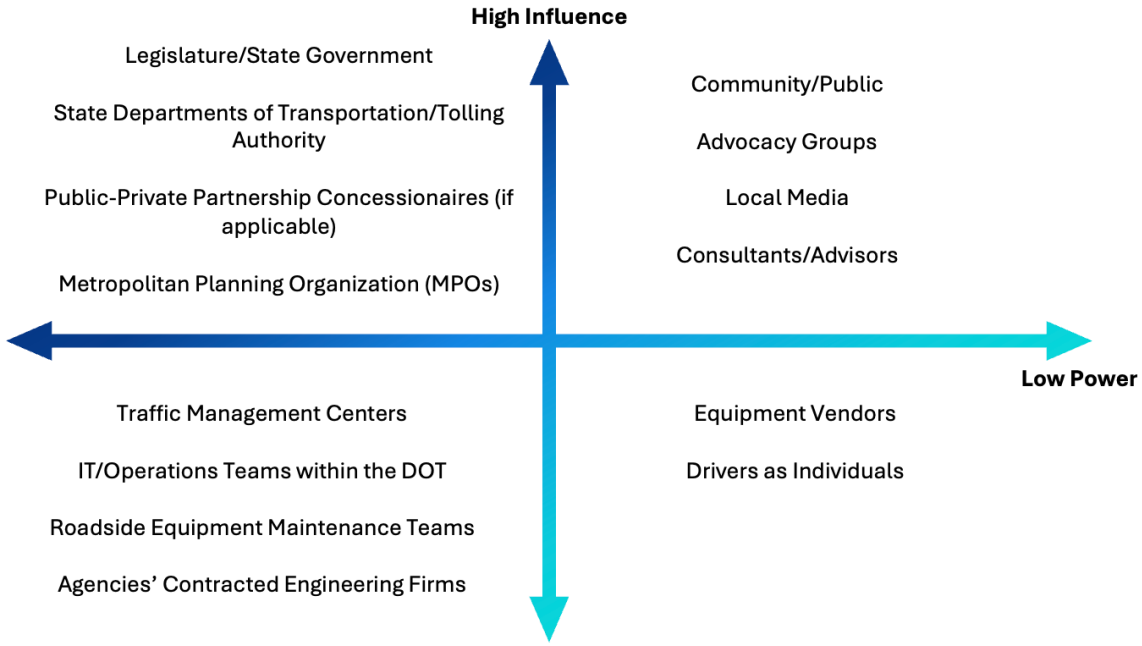
WSTC. n.d. “I-405 & SR 167 Toll Lanes Toll Rates & Policies.” WSTC. Accessed on November 27, 2025. https://wstc.wa.gov/programs/tolling/i405-sr167-tolled-lanes/.

Zhang, Kai, and Stuart Batterman. 2013. “Air pollution and health risks due to vehicle traffic.” *Science of the Total Environment*. 450-451: (April): 307-316. https://doi.org/10.1016/j.scitotenv.2013.01.074

Zimmerman, Carol, Rachel Klein, Jeremy Schroeder, Brian Pessaro, Mark Burris, Katie Turnbull, Barbara Joy, and Eric Schreffler. 2015 “*Contemporary Approaches to Congestion Pricing: Lessons Learned from the National Evaluation of Congestion Pricing Strategies at Six Sites*.” Washington, DC: U.S. Department of Transportation, Federal Highway Administration, August 2015. https://www.govinfo.gov/content/pkg/GOVPUB-TD10-PURL-gpo66314/pdf/GOVPUB-TD10-PURL-gpo66314.pdf.

5 Appendix

5.1 Appendix 6: Stakeholder Map



5.2 Appendix 7: Opportunities Index

Washington

Project Name	Agency	Description	Project Size (miles)	Timeline
I-405/SR 167 Corridor Program: I-405/Brickyard to SR 527 Improvement Project [1]	WSDOT	This project will extend existing dual express toll lane system by creating 1 new express toll lane in each direction. Express lanes under WSDOT use dynamic toll rates.	4.5 (Small)	Project is expected to complete construction in 2028
I-405/SR 167 Corridor Program: I-405/Renton to Bellevue Widening and Express Toll Lanes Project [2]	WSDOT	This project will add a 2-lane ETL system by adding 1 new lane in each direction and combine the existing HOV lane with the new lane to create a dual ETL system. Express lanes under WSDOT use dynamic toll rates.	40 (Large)	2015 - 2027

I-405/SR 167 Corridor Program: SR 167 Corridor Improvements Project [3]	WSDOT	This project will upgrade toll equipment to be consistent with the I-405.	50 (Large)	October 2023 – August 2026
SR 167/SR 512 Express Lane Extensions [3]	WSDOT	Extend SR 167 express toll lanes southbound to the SR 410/SR 512 interchange. SR 167/SR 512 to Ellingson Road Vicinity - SB Congestion Management	n/a	Start date: 2027
I-5 Columbia River Bridge Pre-Completion Tolling Project [4]	WSDOT	Installs variable toll collection devices on I-5 and its adjacent facilities in Washington and Oregon for toll collection of traffic crossing the existing Colombia River Bridge.	n/a	RFQ Ad date: 02/02/2026 Start date: 2026
SR 509 Completion Stage 2 [3]	WSDOT	This project will widen SR 509 between 24th/28th Ave. S. and S. 188th St. and add toll lanes. This is a multi-year design-build project, and the programming reflects the planned expenditure schedule within the span of the current TIP.	n/a	Start date 2026 Agency: WSDOT - NW

[1] Source: (WSDOT n.d.a)
[2] Source: (WSDOT n.d.b)
[3] Source: (WSDOT n.d.e)
[4] Source: (WSDOT n.d.c)

California

Project	Agency	Description	Project Size (miles)	Timeline
I-680 Sunol Express Lanes Project – Phase 2 [1] *	Alameda CTC & VTA	This phase of the project aims to construct nearly 5 miles of HOV/Express Lane along northbound direction on I-680 from SR-237 to Auto Mall Pkwy through widening efforts.	5 (Small)	Not available
I-15 Express Lanes Project Southern Extension [2] *	RCTC & Caltrans	This project will extend the I-15 Express Lanes an additional 15.8 miles	15.8 (Medium)	Construction anticipated for 2027

		and add 2 tolled express lanes in both directions.		
I-15 Corridor Freight and Express Lanes Project [3] *	SBCTA, Caltrans, & RCTC	This project will added express lanes in the median of I-15 to join existing express lanes in Riverside Country. Toll pricing will vary based on demand and distance.	8 (Small)	2025 - 2028
I-10 Express Lanes Phase 2 + Phase 3 [4] *	SBCTA	Phase 2 will construct single toll express lanes where there are currently no HOV lanes (greenfield). Phase 3 will construct 12 miles of express lanes.	Phase 2: 11.1 (Medium) Phase 3: 12 (Medium)	Phase 2: Construction slated to begin in 2025 Phase 3: Not available
I-5 North Coast Corridor Program [5]	SANDAG & Caltrans	This project will construct 27 miles of Express Lanes from La Jolla to Oceanside.	27 (Large)	Not available
Silicon Valley Express Lanes Program Phase 4 + Phase 5 [6][7] *	VTA	Phase 4 will convert existing single carpool lanes to Express Lanes on SR 85. Phase 5 will convert existing carpool lanes to express lanes in both directions on US 101 and add a second express lane in both directions.	Not available	Phase 4: Spring 2025 – Winter 2028 Phase 5: 2026 - 2029
241/91 Express Connector Project [8]	Transportation Corridor Agencies, OCTA, RCTC, & Caltrans	This project will connect the 241 Toll Rd to the 91 Express Lanes. This connector will be dynamically priced.	7 (Small)	Construction from 2026 - 2029

**Express Lanes are already dynamically priced*

[1] Source: (Alameda CTC 2024)
[2] Source: (RCTC. n.d.a.)
[3] Source: (SBCTA 2025)
[4] Source: (SBCTA n.d.)
[5] Source: (Keep San Diego Moving 2022.)
[6] Source: (VTA n.d.a)
[7] Source: (VTA n.d.b)
[8] Source: (Transportation Corridor Agencies 2025)

Florida

Project	Agency	Description	Project Size (miles)	Timeline

I-275 Pinellas Corridor [1]	FDOT	This project will widen the interstate to construct 2 express lanes in each direction.	Not available	Not available
I-4 Corridor Expansion [2] *	FDOT	This project will widen I-4 approximately for 17 miles.	17 (Medium)	Construction anticipated for 2028

[1] Source: (FDOT n.d.c)
[2] Source: (FDOT n.d.d)

North Carolina

Project	Agency	Description	Size	Timeline
Monroe Expressway [1]	NCTA	This project will advertise contracts for a new RTCS in January 2026. The Monroe Expressway (currently in maintenance phase) are looking to pilot new equipment to advance technology. [2]	Not available	Current Contract Expiration: January 2027 Contract Advertisement: January 2026 Projected New Contract Award: June 2026
Back Office System [1]	NCTA	The NCTA will advertise for a new BOS upon contract expiration in 2030.	Not available	Current Contract Expiration: October 2030 Contract Advertisement: TBD Projected New Contract Award: TBD
Triangle Expressway & Complete 540 [1]	NCTA	This project will advertise contracts for a new RTCS upon contract expiration in June of 2033. The Triangle Expressway (currently in maintenance phase) are looking to pilot new equipment to advance technology. [2]	Not available	Current Contract Expiration: June 2033 Contract Advertisement: TBD Projected New Contract Award: TBD
I-485 Express Lanes [1]	NCTA	This project will advertise contracts for this Expressway upon contract expiration in December of 2036. These lanes are expected to enable the application of dynamic pricing. [2]	Not available	Current Contract Expiration: December 2036 Contract Advertisement: TBD Projected New Contract Award: TBD

[1] Source: (NCTA 2025)
[2] Source: (NCTA 2025b)

Illinois

Project	Agency	Description	Size	Timeline

Illinois Tollway Strategic Plan July 2025 [1]	Illinois Tollway	Illinois Tollway is committed to exploring dynamic pricing and allowing for alternative procurement and delivery methods, along with pilot, investment and commercialization partnerships, as part of their Strategic Plan.	Not available	Not available

[1] Source: (Illinois Tollway 2025)