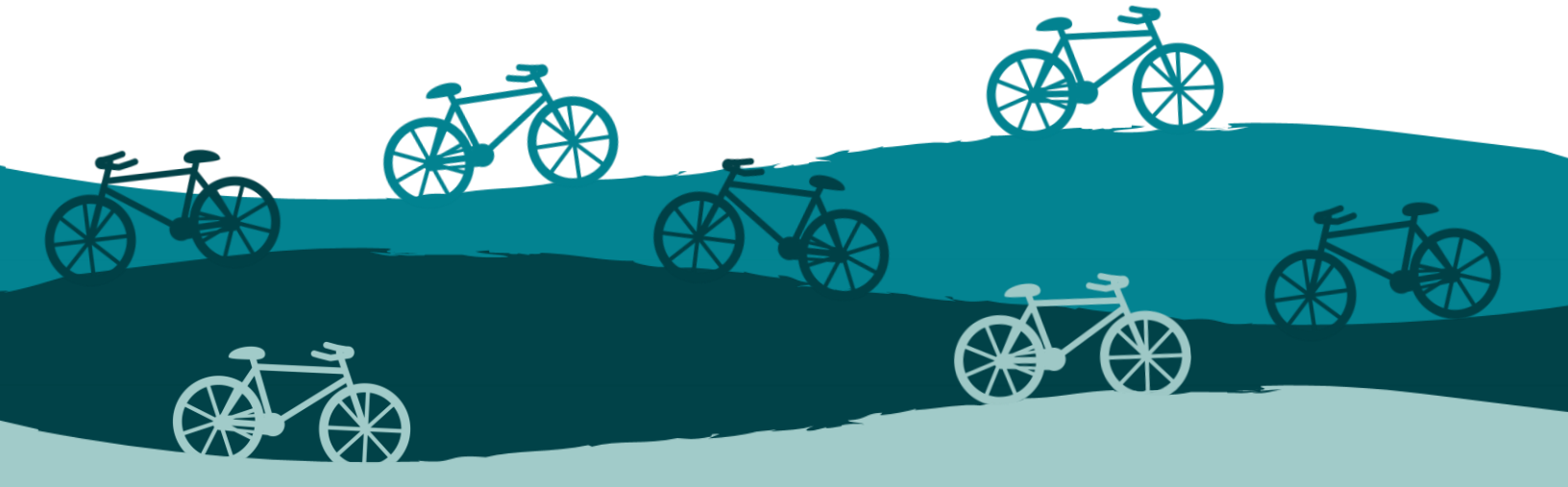
Bike Network Plan

Implementation Plan

December 2024



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What is the BNP Implementation Plan?

Since 2023, several plans, reports, and memoranda have been developed as part of the City of San Antonio (City or COSA) Bike Network Plan (BNP). These documents include:

- **Recommended Network Development & Structure Report:** describes methodology behind creating the BNP's safe, connected, and accessible bike network.
- **Policy Actions and Constraints Report:** evaluates existing policies, identifies gaps, and recommends amendments to enhance bicycle infrastructure and safety.
- **Funding Strategy Plan:** outlines a comprehensive approach to securing the funding needed for implementation of the BNP.
- **Cost Estimation Report:** planning-level guide to estimate BNP facility costs for proposed bicycle facilities within San Antonio's BNP.
- **Bike Facility Maintenance Cost Estimation Memorandum:** analyzes four primary maintenance issues affecting the functionality of the current bike network and threatening the success of the future bike network
- **Bike Facility Guidelines for Future Amendments and Guidance for Future Code Amendments:** comprehensive guide the planning, design, and implementation of San Antonio bicycle infrastructure.
- **Performance Metrics and Targets Memorandum:** defines the metrics that have been put in place to keep the City on track for success in the development of the BNP.

These documents provide a foundational guide to support San Antonio's development goals by equipping the City with evidence-based, community-driven recommendations that enable the efficient passage of ordinances. They enhance public transparency by showcasing the scope of planned projects and their impact on equity, safety, and sustainability. Furthermore, they foster collaboration by encouraging partnerships with local organizations, state agencies, and private entities to optimize resource utilization.

These documents provide comprehensive guidelines and actionable recommendations for improving San Antonio's bike infrastructure. However, for these recommendations to be implementable, they need to be distilled into easily accessible, measurable, and specific actions, referred to here as *implementations*.

This Implementation Plan aggregates every implementation within each BNP document, whether a policy recommendation, a new project, or recommended programming for the City to consider. This will provide more efficient references for both city council and staff and enable the community to develop a greater understanding of the City's goals.

This plan begins by summarizing the findings and recommendations of each report and then aggregates all recommended implementation into a Unified Implementation Table (page 16).

Implementation Plan Component Document Summaries

Document 1: Recommended Network Development & Structure Report

Impact:	Addresses connectivity issues, enhances safety, and builds an integrated network that has expanded from 209 miles in 2011 to 604 miles in 2023.
Importance:	Demonstrates innovative designs, placemaking, and sustainable infrastructure that can inspire citywide adoption, and establishes a replicable model for other cities aiming to develop equitable and accessible bike networks.

The BNP *Recommended Network Development & Structure Report* establishes a roadmap for creating a safe, connected, and accessible bike network that supports everyday transportation needs. It evaluates existing conditions, sets guiding principles, and outlines the data-driven methodology used to develop, prioritize, and ultimately implement bike infrastructure projects.

The Network Development Methodology begins with evaluating the existing network by identifying gaps, user needs, and accessibility challenges using tools like the Bike Equity Index. Data from various sources informed this assessment, including an analysis of the current bicycle network's physical characteristics, connectivity, traffic volumes, user comfort levels, and safety metrics. Additional data, such as accessibility to key destinations, stakeholder and community input, reviews of past studies and feedback, and demographic information were also incorporated to provide a comprehensive picture.

Identifying gaps in the network was a crucial step, categorizing them into small gaps (e.g., short segments that connect existing facilities), corridor gaps (e.g., longer stretches along major roads), and expansion opportunities (e.g., new low-stress routes). To guide development, a network hierarchy was established, including a **Primary Network** of direct routes connecting major destinations, a **Visionary Network** for future connections to enhance accessibility, and a **Neighborhood Network** consisting of local streets that provide low-speed, bike-friendly alternatives.

Projects were then defined and prioritized using a 100-point scoring system based on criteria like connectivity, safety, and feasibility. This ranking system classified projects into four tiers: **Tier 1** projects, which are highly feasible and of the highest priority; **Tier 2**, which are feasible with moderate priority; and **Tiers 3 and 4**, which represent projects with lower feasibility and priority. This structured methodology ensures that resources are allocated effectively to create a network that meets community needs while addressing safety, equity, and connectivity goals.

Extensive community input, gathered through surveys with over 3,600 responses, pop-up events, advisory committees, and feedback from past plans and ongoing city initiatives, played a crucial role in shaping the network.

Document 2: Policy Actions and Constraints Report and Safe Streets For All Application Award

Impact:	Bridges policy gaps, ensures cyclist safety, integrates multi-modal transportation goals, and streamlines safety solutions.
Importance:	Emphasizes an integrated, flexible approach to policy development and positions San Antonio as a progressive leader in urban transportation policy, aligning local practices with national safety standards.

The BNP *Policy Actions and Constraints Report* evaluates existing city policies, identifies gaps, and recommends amendments to enhance bicycle infrastructure and safety in San Antonio. The report aims to guide policy development toward creating safer, more accessible, and connected bike infrastructure. By addressing policy gaps related to infrastructure deployment, usage, and safety, it lays the groundwork for a more cohesive and bike-friendly urban environment

Policy Categories
The report reviewed 23 local, regional, and state-level documents, identifying 16 policies for potential expansion or amendment. These policies were categorized into two main areas: **Bicycle Infrastructure Deployment** and **Bicycle Infrastructure Use**.

Bicycle Infrastructure Deployment focuses on the regulation of physical infrastructure such as bike lanes, right-of-way (ROW), and multi-use trails. It also addresses developments along or near proposed bicycle facilities, emphasizing the role of the built environment in shaping transportation behaviors. Rather than directly guiding individual actions, these policies aim to influence behavior through infrastructure design. Key recommendations in this category include amending ROW policies to accommodate both temporary and permanent enhancements for cyclists during construction projects, incorporating bike-friendly designs in road reallocation projects, and addressing maintenance inequities, utility relocation hazards, and cyclist visibility through design improvements.

Bicycle Infrastructure Use governs the behaviors of cyclists, pedestrians, and drivers on bicycle infrastructure with the goal of enhancing safety. Recommendations here include enforcing no-parking regulations in bike lanes and implementing a 5-foot safe passing distance for vehicles. Additional suggestions include relaxing restrictions on sidewalk cycling in low-risk areas, advocating for the state-level adoption of Idaho stop laws, lowering citywide speed limits to 25 mph, and improving pedicab operations by expanding their service areas and hours.

These proposed amendments and expansions aim to create a more cyclist-friendly environment by improving both the infrastructure and the rules governing its use.

The impact and implementation of policies supporting the BNP are categorized by their planning impact—low, moderate, or high—based on required resources and stakeholder involvement, and their timeline—short-term (1–5 years), mid-term (5–10 years), or long-term (10–15 years). Most policies require adoption by the City Council and Mayor, with implementation responsibilities falling to designated city departments, such as Public Works, Planning, Transportation, and the Police Department, as outlined in the Code of Ordinances. This structured approach ensures that policy actions are both strategic and achievable, fostering progress toward a more bike-friendly city.

Document 3: Funding Strategy Plan

Impact:	Provides a structured roadmap for financing a $3–$8 billion bike network vision over 25 years.
Importance:	Balances traditional and innovative funding mechanisms and encourages fiscal responsibility while expanding San Antonio's bike infrastructure sustainably.

The BNP *Funding Strategy Plan* outlines a comprehensive approach to securing the $3–$8 billion needed over 25 years to fully implement the BNP. It emphasizes leveraging traditional funding, competitive grants, and innovative partnerships to address financial challenges while ensuring alignment with city and federal priorities.

Funding Needs and Projections

- Local Match: $540 million–$1.44 billion over 25 years ($21.6–$57.6 million annually).
- Federal Grants: Requires applying for $2–$7 million in federal funds yearly.
- Strategy assumes sustained availability of existing programs like Bipartisan Infrastructure Law (BIL) and municipal funding sources.

Traditional funding sources for San Antonio's transportation projects include state, regional, and local contributions. State funding encompasses federal formula funds distributed through TxDOT and State Highway Fund (SHF) revenues, with projects required to align with TxDOT's Statewide Transportation Improvement Program (STIP) and the Metropolitan Planning Organization's (MPO) Transportation Improvement Program (TIP). Regional funding is allocated by the Alamo Area MPO (AAMPO) through annual project calls that prioritize safety, connectivity, and equity. At the local level, funding is derived from municipal bonds, operating budgets, and initiatives such as the Infrastructure Management Program (IMP) and the Advanced Transportation District (ATD). Notably, recent bond approvals allocated $10 million to support the BNP, reinforcing the city's commitment to enhanced urban mobility.

Competitive and variable funding sources for San Antonio's transportation initiatives include federal, state, local, and private contributions. Federal discretionary programs, such as RAISE and INFRA grants under the BIL, emphasize resilience, equity, and innovation. At the state and local levels, funding opportunities include Recreational Trail Grants, Community Development Block Grants (CDBG), and Tax Increment Financing (TIF), offering diverse avenues to support infrastructure development. Additionally, private and nonprofit contributions play a vital role, with partnerships forged with philanthropic organizations or the creation of city-specific entities, modeled after successful initiatives like Atlanta's PATH Foundation or Beltline, driving project implementation and sustainability

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Quick-build and opportunistic projects focus on leveraging existing initiatives, such as roadway resurfacing, to implement lower-priority bike infrastructure cost-effectively and ahead of schedule. These efforts are strategically positioned to maximize competitiveness for funding opportunities by aligning with key merit criteria, including safety, climate change mitigation, connectivity, equity, economic impacts, and innovation. Preparedness plays a crucial role, as projects that demonstrate readiness, strong partnerships, and alignment with federal goals are more likely to secure funding. Successful grant applications require thorough documentation, quantified benefits, and a clear connection to grant-specific criteria, ensuring projects are well-positioned for approval and implementation.

A strategic approach to building out the BNP involves maximizing already programmed projects and leveraging partnerships to make efficient use of limited resources. Innovative approaches to implementing the BNP include establishing a dedicated nonprofit or city entity to focus exclusively on its execution.

Document 4: Cost Estimation Report

Impact:	Serves as a planning-level guideline to estimate costs and enables the city to meet both short-term demands and long-term urban planning goals.
Importance:	Demonstrates innovative designs, placemaking, and sustainable infrastructure that can inspire citywide adoption, and establishes a replicable model for other cities aiming to develop equitable and accessible bike networks.

The BNP *Cost Estimation Report* serves as a planning-level guideline to estimate costs for proposed bicycle facilities in San Antonio's BNP. It outlines methodologies and assumptions to help the city budget effectively, prioritize projects, and make informed decisions based on financial feasibility and urban planning goals.

The methodology relies on data from the COSA 2022 Unit Price List, supplemented with pricing information from the Texas Department of Transportation (TxDOT) when necessary. Estimates include a comprehensive range of costs, from materials and construction to mobilization, design, community engagement, traffic control plans, contingencies, and annual escalation aligned with likely implementation years. This approach has been applied to over 1,000 projects outlined in the Recommended Network Development Report, ensuring a robust and adaptable cost analysis process. Adjustments were made to account for the design complexity of individual projects and the need for coordination with interfacing entities such as TxDOT, San Antonio Water System (SAWS), the San Antonio River Authority (SARA), and private rail companies. However, extensive drainage modifications were excluded from these estimates to streamline calculations.

The framework distinguishes between quick-build and full-build project options. Quick-build projects involve temporary or semi-permanent solutions, such as paint, bollards, and movable barriers, enabling rapid, low-cost installations to improve safety and accessibility immediately. These projects are particularly useful for testing concepts, gathering community feedback, and addressing urgent needs. In contrast, full-build projects focus on permanent solutions using high-quality materials like concrete, steel, and landscaping. While these require more extensive planning and construction, they provide durable infrastructure that aligns with long-term urban planning goals and supports sustained heavy use.

Balancing quick-build and full-build approaches allows San Antonio to address immediate needs while advancing a vision of long-term sustainability and a bike-friendly urban environment. Quick-builds offer flexibility and adaptability for immediate enhancements, while full-builds contribute to lasting urban development, ensuring a comprehensive strategy for improving the city’s bike infrastructure.

A comprehensive list of 1,035 projects was created, categorized into Tiers 1 through 4, with projected costs provided for both full-build and quick-build options. This transparent breakdown helps prioritize projects while acknowledging that circumstances and design requirements may evolve. Consequently, project costs are subject to change based on future conditions and unforeseen factors, emphasizing the adaptable nature of the cost estimation process.

This targeted approach ensures that crossing improvements are planned and budgeted effectively, addressing key connectivity barriers in San Antonio’s bike network.

Document 5: Bike Facility Maintenance Cost Estimation Memorandum

Impact:	Provides insights into impacts and implications for pavement lifecycle and maintenance, outlines strategies for maintaining clean and safe bike facilities, and maintains infrastructure usability and safety while reducing maintenance costs.
Importance:	Stresses the minimal impact of bicycles on roadway surfaces, provides a cost-effective and scalable plan for maintenance, supports a seamless user experience and fosters public trust in city services.

The BNP *Bike Facility Maintenance Cost Estimation Memorandum* analyzes four primary maintenance issues affecting the functionality of bike networks. While programming to perform this maintenance is already a part of COSA's 5-year Infrastructure Management Program (IMP), this memorandum recommends additional funding for the IMP to cover necessary maintenance and new equipment to maintain bike facilities. With approximately $15,000,000 over 5 years of increase (a 1.75% annual budget increase based on the 2025 IMP Budget), the following maintenance practices can provide San Antonians a safer and more comfortable riding experience.

Pavement Preservation: Motor vehicles have a known, substantial impact on pavement conditions. A BNP analysis found that motor vehicles cause, on average 188,000 times more damage to the roadway surface than bikes. As a result, bike facilities, especially at roadway crossings and intersections, must be designed to resist motor vehicle impacts. As the BNP does not plan new surfaces outside existing roadways, except in rare circumstances, there will be **no increased cost** to the city's IMP by implementing new bike facilities. Peer city and COSA experts have found that concrete bike facilities withstand natural and motor vehicle impacts better than asphalt. Thus, on all new facilities and rehabilitation projects, bike facilities crossings at roadways should be considered for concrete construction rather than asphalt, with the added benefit that stained concrete could be used potentially reducing costs of striping reapplication.

Striping Reapplication: Motor vehicles not only impact the roadway surface, but the striping attached to it. Frequent vehicle traffic can degrade thermoplastic pavement markings and high temperatures can cause the asphalt surface to secrete oils that, when carried on the tires of motor vehicles, create a dirty appearance on pavement markings. Stained and etched concrete applications can both stand up to motor vehicle impacts and delineate bike and pedestrian spaces, so stained pavement applications should be considered for all bike facility projects, especially in high motor vehicle interaction areas (such as intersections) to avoid costly re-striping. The estimate of restriping costs after 5 years of implementation is **$11,467,500** total.

Debris Removal: Bike facilities should always be given sweeping priority as road debris can force cyclists out into traffic, increasing the risk of severe or fatal injury. The City has already purchased a "mini-sweeper" to fit inside protected bike lanes and on shared use paths; as more of these facilities are implemented, the city should consider buying additional sweepers. To treat problem areas such as drainage at bottom of roadway slopes, drainage inlets, and construction zones, the City should partner with local bike-related nonprofits to use a human powered bike lane sweeper as frequently as monthly and modify the 3-1-1 app to provide a section specific to all bike related reporting. Altogether additional sweeping at the end of 5 years should cost the city **$1,145,000** between the total cost of new sweepers and labor hours.

Vandalism and Crash Impacts: Signage and protective elements are essential to a function bike network, those that experience vandalism and motor vehicle crash impacts should be replaced promptly, though interviewed experts have not frequently incurred maintenance costs. Replacing both signage and delineators will be required, depending on the bike facility after 5 years of implementation on both existing and new bike facilities in five years, totaling **$1,623,600.**

Document 6: Bike Facility Guidelines for Future Amendments and Guidance for Future Code Amendments

Impact:	Crucial for enhancing safety, streamlining planning, adapting to evolving needs, and promoting equity by prioritizing access to safe, connected bike infrastructure for all residents. It also Ensures consistent and adaptable standards across new developments.
Importance:	Fosters smarter growth through cohesive planning, advancing Vision Zero safety goals, promoting community engagement, encouraging sustainable transportation, boosting economic vitality, and positioning San Antonio as a national leader in innovative design.

The *San Antonio Bike Facility Guidelines for Future Amendments* document provides a comprehensive framework to guide the planning, design, and implementation of bicycle infrastructure across the city. This still follows the City's rigorous process that includes engineering assessment and public engagement.

Key Features

1. Context-Sensitive Design
2. Bicycle Facility Selection: based on the San Antonio BNP, focusing on seamless, high-quality, low-stress infrastructure. Prioritizes safe connections to key destinations during road planning.
3. Bicycle Facility Types
4. Intersection Treatments
5. Implementation Guidelines
6. Additional Considerations

This guidance serves as a decision-making tool to balance immediate improvements with long-term planning while ensuring alignment with broader urban development goals and aims to promote a multimodal transportation system that prioritizes safety, accessibility, and sustainability while fostering a bike-friendly environment across San Antonio.

San Antonio's current Unified Development Code (UDC) provides general standards for streets within new subdivisions and developments but offers limited guidance for bicycle facilities, which can hinder the city's BNP. Key limitations include lack of specificity on bicycle facility types, rigid design standards that may lead to over- or under-built streets, and a vehicle-focused design approach without consideration for adjacent land use.

To address these gaps, the BNP developed two new sets of bicycle facility guidelines:

1. Bicycle Facility Guidelines for Future Amendments – Provides recommended bicycle facility types tailored to roadway classifications and surrounding land use but does not include dimensional specifications.
2. Street Typologies and Bicycle Facility Guidelines – An internal document offering context-sensitive street designs that incorporate bicycle, pedestrian, and transit modes, aiming to support the city's transportation vision and address UDC limitations.

Document 7: Performance Metrics and Targets Memorandum

Impact:	Ensures consistent progress across all goals set forth in the BNP.
Importance:	Includes metrics focusing on roadway safety, community engagement, number of bike users, counts of projects implemented, and health of San Antonio residents.

The BNP *Performance Metrics and Targets Memorandum* defines a set of metrics put in place to keep the City on track for success in the development of its bike network. Meeting or exceeding these metrics means that San Antonio is making real progress towards a safer and more functional transportation system.

TABLE 1: BIKE NETWORK PLAN PERFORMANCE METRICS

#	Metric or Indicator Description	Target or Analysis Period
1	*Count* of **roadway projects** in San Antonio **that have received bike improvements**.	Count of Tier 1 roadway projects completed within 5 years. Count of Tier 2 roadway projects completed within 10 years.
2	*Count* of **intersections** in San Antonio **that have received bike improvements**	Count of Tier 1 intersection projects completed within 5 years. Count of Tier 2 intersection projects completed within 10 years.
3	*Count* of **policies** implemented or amended, **new programs** created, or **grants** received.	Implement policies pertaining to cyclist visibility and safety, speed limits, traffic study requirements, bicycle use rules, and pedicab operation within 5 years. All policies recommended in the *Policy Actions and Constraints Report* implemented within 10 years.
4	*Count* of the **number of people reached** by bike-related activities.	Five and 10-year goals will aim to keep consistent with this number, receiving at least 3,500 public responses from its future engagement processes.
5	*Count* of **in-person or online bike-related events.**	Hold at least one engagement events in each district every year.
6	*Percentage* **change in commute mode share**.	Increase bike commute up to 1% of the total within 5 years. Increase in bike commute share 20% every year between Years 6 and 10.
7	*Count* of bike **crashes resulting in deaths and serious injuries**.	Reduce serious and fatal cyclist crashes to 20 or fewer per year within 5 years. Reduce serious and fatal cyclist crashes to seven or fewer crashes per year within 10 years.
8	Reductions in **Vehicle Miles Traveled.**	Reduce Vehicle Miles Traveled (VMT) by 10% by 2030. Reduce VMT by 30% by 2040.
9	Count of with *VIA Bus* using **Bus Bike Racks**.	Data will be provided quarterly as trip count updates.
10	Observed *counts* of **bike users**.	Data will be pulled and analyzed by the City during future updates to the Bike Plan. Every 6 months, the locations of the counters will be re-evaluated as necessary/feasible.
11	Reductions in reported **rates of chronic diseases** and mental health indicators.	The Transportation Department will collaborate with Metro Health to update and monitor chronic disease rates on a biannual basis.

Unified Implementations Table

This Unified Implementations Table identifies actions or approaches the City can take to improve biking in San Antonio including building or managing **infrastructure (I),** amending the City **Code (C),** running **programs (P),** and **advocating (A)** at other levels of government. From there, the table is structured as follows:

The table columns are ordered from left to right as listed below:

- **Implementation**: What specific implementation should be done? What is changing or what is being funded?
- **Lead, Supporting**: What Department or organization is leading this Implementation and who is supporting it?
- **Timeframe, Target Year**: When can this Implementation be taken and when is the goal to implement?
- **Metric, Indicator**: How will we measure the success of this implementation, what indicators will tell us if it's successful?
- **Origin, Page Number**: Where is this implementation referenced and where can one read more?

All **origin** documents referenced, summarized earlier in this plan, are numbered below in order:

1. Recommended Network Report
2. Policy Action and Constraints Report and Safe Streets For All Application Award
3. Funding Strategy Plan
4. Cost Estimation Report
5. Maintenance Cost Estimation Memorandum
6. Bike Design Guidelines for Future Amendments and Guidance for Future Code Amendments
7. Performance Metrics and Targets Memorandum

Lead and Supporting City Departments referenced as either leading or supporting each implementation are listed below:

- Transportation Department (TD)
- Public Works Department (PWD)
- Parks and Recreation Department (Parks)
- Center City Development & Operations (CCDO)
- Communications & Engagement (C&E)
- Development Services (DSD)
- Government Affairs (GA)
- Planning
- Office of Sustainability (Sustainability)
- San Antonio Police Department (SAPD)

The above structure and referenced documents will be noted in the numbering structure. Each line item will be coded with the following:

- Approach: I, C, A, or P
- Reference Document: 1 – 7
- Number: Numbered in order starting from 1

As an example, the implementation number "**P.5.3**" would be a program, originating from the Maintenance Cost Estimation Memorandum, and the 3rd program noted in that report.

TABLE 2: UNIFIED IMPLEMENTATIONS TABLE

#	Implementation	**Lead;** *Supporting*	**Timeframe** (Years)	**Target Year**	**Metric(s);** *Indicator(s)*	**Origin, Page Number**
A.2.1	Advocate for passage of SB 2506, the proposed state bill to legalize Idaho stops in Texas which failed to pass in 2023. Implement policy with robust public awareness and education campaigns for drivers and bicyclists.	**GA**; *TD*	5 - 10	2035	**3, 4**; *7*	Policy Actions and Constraints Report, 52
A.2.2	Advocate to increase safe passing distance in Texas Transportation Code from 3 feet to 5 feet for roadways with a speed limit above 25 MPH.	**GA**; *TD*	5 - 10	2035	**3**; *6, 7, 8*	Policy Actions and Constraints Report, 60
A.2.3	Work with other municipalities to advocate for removal or lowering of statewide prima facie speed limit minimums.	**GA**; *TD*	5 - 10	2035	**3, 5**; *6, 7, 8*	Policy Actions and Constraints Report, 36
C.2.1	Allow bicycle riding on sidewalks except where action is prohibited for safety reasons. Corridors on which sidewalk riding is not allowed should be identified and appropriately signed.	**TD**; *PW, C&E*	1 - 5	2032	**3, 4, 5**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 49
C.2.2	Amend Code of Ordinances to increase the number of pedicab operating licenses.	**TD**; *PW, SAPD*	3 - 5	2032	**3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 54
C.2.3	Amend Code of Ordinances to allow pedicabs to operate at all times and to expand their operating area (lift restrictions on pedicab operation on Commerce, Market, and Cesar Chavez).	**TD**; *PW, SAPD, CCDO*	3 - 5	2032	**3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 54
C.2.4	Prohibit motor vehicles from parking, idling, or driving in all bike lanes city-wide.	**TD**; *PW, SAPD*	1 - 3	2027	**1, 3, 4**; *7, 8*	Policy Actions and Constraints Report, 57
C.2.5	Update ordinance 2014-05-29-0370 to prohibit parking in all existing and future bicycle lanes. Remove restriction that limits prohibition to streets with adequate width to support both on-street parking and bicycle lanes.	**TD**; *PW, SAPD*	1 - 5	2032	**3**; *7, 8*	Policy Actions and Constraints Report, 57

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.2.6	Deploy quick-build protected bike lanes on high violation corridors. Use 311 call volumes from before and after installation to determine permanence of infrastructure.	**PW**; *SAPD, TD, C&E*	1 - 5	2032	**1, 2, 3, 4, 5**; *6, 7, 10*	Policy Actions and Constraints Report, 57
C.2.7	Consider adopting a recommendation ordinance to educate and encourage drivers to pass bike users with 5 feet of space.	**TD**; *C&E*	1 - 3	2027	**3, 4, 5**; *6, 7, 10*	Policy Actions and Constraints Report, 59
C.2.8	Consolidate all bicycle parking regulations in single section of Code of Ordinances, UDC, or other policy documents and encourage building more bike parking facilities.	**DSD**; *TD, PW*	3 - 5	2032	**1, 2, 3**; *6, 10*	Policy Actions and Constraints Report, 63
C.2.9	Consider incentives for developers to provide secure bike parking as well as other end-of-trip facilities for cyclists.	**DSD**; *TD, PW*	5 - 10	2032	**3**; *6, 10*	Policy Actions and Constraints Report, 65
C.2.10	Incorporate roadway reallocation recommendations as part of implementation of the new Complete Streets Policy.	**TD**; *PW*	10+	2040	**3**; *1, 2, 6, 7, 8, 10*	Policy Actions and Constraints Report, 20
C.2.11	Adopt thresholds for road diet appropriateness in improving the roadway.	**TD**; *PW*	10+	2040	**1, 2, 3**; *6, 10*	Policy Actions and Constraints Report, 20
C.2.12	Require roadways around civic buildings (including schools) have complete pedestrian and bicycle infrastructure and leverage funding on this provision.	**TD**; *DSD, PW*	3 - 5	2032	**1, 2, 3, 4, 10**; *6, 7, 10*	Policy Actions and Constraints Report, 20
C.2.13	In the ROW acquisition process, include explicit language about protection of existing or provision of new bicycle infrastructure.	**TD**; *PW, Planning*	1 - 3	2027	**3**; *1, 2, 7*	Policy Actions and Constraints Report, 21
C.2.14	Amend sections of Code of Ordinance pertinent to utility relocation to include language requiring preservation, improvement, or construction of bicycle facilities when disturbing the public ROW. This policy should be codified in other sections of the code pertinent to the public ROW, such as ROW acquisition and roadway reallocation.	**DSD**; *TD, PW, Planning*	1 - 3	2027	**1, 2, 3**; *7, 10*	Policy Actions and Constraints Report, 25

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.2.15	Require any construction that disturbs bicycle facilities to provide temporary bicycle facilities that adhere to same standards of safety and accessibility for temporary pedestrian facilities outlined in the MUTCD.	**PW**; *DSD, TD*	3 - 5	2032	**1, 2, 3**; *7, 10*	Policy Actions and Constraints Report, 21
C.2.16	Remove the misdemeanor offense for private citizens' failure to maintain ROW.	**TD**; *SAPD, PW*	1 - 3	2027	**3**;	Policy Actions and Constraints Report, 23
C.2.17	Adopt policy for public maintenance of ROW once appropriate funds and capacity have been met within City's IMP.	**TD**; *SAPD, PW*	5 - 7	2032	**3**; *1, 2*	Policy Actions and Constraints Report, 23
C.2.18	Include explicit language about protection of existing or provision of new bicycle infrastructure alongside improvements to paving, sidewalks, etc., when ROW is disturbed for utility development or relocation.	**PW**; *TD, Planning*	1 - 3	2027	**3**; *1, 2*	Policy Actions and Constraints Report, 21
C.2.19	Expand scope of visibility improvements at intersections to include bicycle infrastructure, especially examples included in recommendations from BNP and VZAP.	**PW**; *TD, Planning*	5 - 7	2032	**3**; *1, 2, 7, 10*	Policy Actions and Constraints Report, 28
C.2.20	Implement intersection and curb “daylighting” policies, such as curb bulb outs, parking prohibitions within 20-25 feet of an intersection, and removal of any obstructions at intersections such as trees and shrubbery or street furniture.	**PW**; *TD, Planning*	1 - 5	2032	**1, 2;** *6, 7, 10*	Policy Actions and Constraints Report, 28
C.2.21	Require all new or existing bicycle facilities utilize colored roadway markings/colored concrete to increase visibility.	**PW**; *TD*	1 - 5	2032	**3**; *7, 8, 10*	Policy Actions and Constraints Report, 29
C.2.22	Determine bicycle detection type most feasible and attractive for community’s needs and adopt policy to install such detection systems at intersections along the bike network.	**PW**; *TD*	5 - 7	2032	**3**; *2, 6, 7, 10*	Policy Actions and Constraints Report, 31

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.2.23	Lower prima facie speed limit to 25 MPH citywide and 20 MPH on residential roads. Increase speed limit sign density. Amend UDC to update design speeds, as necessary.	**TD**; *PW, SAPD*	7 - 10	2035	**1, 2, 3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 31
C.2.24	Increase presence and visibility of speed limit signage.	**PW**; *TD*	1 - 3	2027	**1, 2**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 31
C.2.25	Review design guidelines and support those that encourage drivers to drive slower citywide.	**TD**; *PW, DSD*	5 - 7	2032	**3**; *1, 2, 7, 10*	Policy Actions and Constraints Report, 31
C.2.26	Require traffic studies to incorporate a data-driven safety analysis based on FHWA's guidance that considers vehicular, cyclist, and pedestrian crash counts, and presence on high-injury network. Studies should be required to ensure adequate connections to existing and planned bicycle and pedestrian facilities. If development is anticipated to have significant percentage of bicycle, pedestrian, and transit trips, counts for those modes may be required. Study should include respective interventions to preserve or improve traffic safety, prioritizing data-driven interventions from among FHWA's Proven Safety Countermeasures.	**TD**; *PW, DSD*	1 - 5	2032	**3**; *1, 2, 7, 10*	Policy Actions and Constraints Report, 38
C.2.27	Include language in the code update that requires traffic studies to identify whether the project falls along the high-injury network or not.	**TD**; *PW, DSD*	1 - 5	2032	**3**; *7*	Policy Actions and Constraints Report, 39
C.6.1	Within UDC, add description of bicycle facility guidelines and link to map illustrating citywide surrounding street context and classification. Add description of bicycle facility types and link to BNP recommended bike network.	**TD;** *PW, DSD*	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 3

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.6.2	As full Street Typologies are developed outside of BNP, add new table to Section 35-506 Transportation and Street Design that correlates how different functional classification types in Tables 506-3 and 506-4 relate to Street Typologies and form the basis for street typologies guidance.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 4
C.6.3	As full Street Typologies are developed outside of BNP, add description of *Street Typologies and Bicycle Guidelines document* (STBG) to introductory text detailing intent of Street Typologies and how to use them in design, a map illustrating citywide surrounding street context and functional classification, and a description of bicycle facility types and link to the bike network.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 4
C.6.4	As full Street Typologies are developed outside of BNP, revise Table 506-3 to only include elements not addressed in STBG and add note for reader to refer to STBG based on context for street and bicycle design recommendations. Adjust Footnote 8 to “Where the Bicycle Network Plan has identified the need for a bicycle facility, within the city limits or ETJ, accommodations outside of the right-of-way may be requested by the developer and will be subject to approval.” Adjust Footnote 12 to “Pavement width shown is the minimum and assumes protected bike lanes require additional pavement width and separated bike facilities will be accommodated outside of the roadway pavement width.” Adjust Footnote 13 and 14 to refer reader to STBG for dimensional criteria.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 4

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.6.5	As full Street Typologies are developed outside of the BNP, Revise Table 506.4 and Table 506.4A.1 to only include elements not addressed in STBG (i.e., right-of-way, design speed, min/max grade, street lighting, etc.) and add a note for reader to refer to the Bike Facility Guidelines for Future Amendments document based on context for street and bicycle design recommendations. Adjust Footnote 2 to refer reader to STBG for dimensional criteria, Footnote 5 to refer to BNP and Footnote 6 to refer reader to Bike Facility Guidelines for Future Amendments for dimensional criteria	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 5
C.6.6	As full Street Typologies are developed outside of BNP, adjust Footnote 4 in Table 506-4B to refer reader to BNP and recommendations STBG.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 5
C.6.7	As full Street Typologies are developed outside of BNP, add footnote in Table 207-3 for readers to refer to BNP and recommendations in STBG for street and bicycle design guidance.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 7, 8, 10*	Guidance for Future Code Amendments, 5
C.6.8	Consider modifying Table 510-1 in Sec 35-512 to incorporate recommended tree shade coverage by functional classification and land use type.	**TD**	1 - 5	2032	**3**; *1, 2, 6, 8, 10*	Guidance for Future Code Amendments, 5
C.6.12	Adjust definition of bicycle facility, bicycle lane, bicycle path, bicycle route, and bicycle trail to reflect recommendations in BNP in Sec 35-A101 Definitions and Rules of Interpretation.	**TD**	1 - 5	2032	**3**; *4, 5*	Guidance for Future Code Amendments, 5

Unified Implementations Table

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
C.3.1	Ensure bike infrastructure improvements are categorized under one of the seven existing sub-programs for approval.	**PW**; *TD*	1 - 3	2027	**3**; *1, 2*	Funding Strategy Plan, 11
C.3.2	Allow HOT and rental car fee funds to be used on bike infrastructure improvements.	**GA**; *TD*	1 - 5	2030	**3**; *1, 2*	Funding Strategy Plan, 18
C.3.3	Commit to $21.6 to $57.6 million in bike infrastructure funding annually to fund entire BNP using a non-federal local match, reaching this funding level over the course of 3 years.	**TD**; *PW, GA*	1 - 25	2050	**3**; *1, 2*	Funding Strategy Plan, 25
I.1.1	Implement Signature projects	**PW**; *TD*	1 - 3	2028	**1, 2**; 6, 7, 8,10,	Recommended Network Development & Structure Report, 27-31
I.1.2	Implement all "Immediate Implementations" bike route projects and evaluate City's roadway network for similar projects.	**PW**; *TD*	1 - 3	2028	**1, 2**; *6, 7, 8,10*,	Recommended Network Development & Structure Report, 24
I.1.3	Implement all "Immediate Implementations" bike lane projects and evaluate City's roadway network for similar projects.	**PW**; *TD*	1 - 3	2028	**1, 2**; 6, 7, 8,10,	Recommended Network Development & Structure Report, 25
I.1.4	Implement all "Immediate Implementations" buffered bike lane projects and evaluate City's roadway network for similar projects.	**PW**; *TD*	1 - 3	2028	**1, 2**; 6, 7, 8,10,	Recommended Network Development & Structure Report, 26
I.1.5	Implement all "Immediate Implementations" bike lane ramp projects and evaluate City's roadway network for similar projects.	**PW**; *TD*	1 - 3	2028	**1, 2**; 6, 7, 8,10,	Recommended Network Development & Structure Report, 27
I.2.1	Install “No Parking” signage along all bike lanes.	**TD**; *PW, SAPD, CCDO*	1 - 3	2027	**1, 2**; 6, 7, 8,10,	Policy Actions and Constraints Report, 57
I.4.1	Implement Tier 1 projects	**PW**; *TD*	1 - 5	2030	**1, 2**; 6, 7, 8,10,	Cost Estimation Report, 35 - 43
I.4.2	Implement Tier 2 projects	**PW**; *TD*	3 - 10	2035	**1, 2**; 6, 7, 8,10,	Cost Estimation Report, 44 - 58
I.4.3	Implement Tier 3 projects	**PW**; *TD*	5 - 15	2040	**1, 2**; 6, 7, 8,10,	Cost Estimation Report, 59 - 68

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
I.4.4	Implement Tier 4 projects	**PW**; *TD*	10 - 25	2050	**1, 2**; 6, 7, 8,10,	Cost Estimation Report, 69 - 75
P.2.1	Utilize progressive ticketing for bike lane obstruction that focuses on education first, with first-time offenders offered opportunity to waive penalty by completing an educational course.	**TD**; *SAPD, C&E*	1 - 5	2032	**3, 4, 5;** *6, 7, 8, 10*	Policy Actions and Constraints Report, 57
P.2.2	Provide a means for residents to report vehicle violations in bike lanes to City through 311, either by phone call or online portal.	**TD**; *C&E*	1 - 5	2032	**3, 4**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 57
P.2.3	Identify additional funding sources for public ROW maintenance.	**TD**; *PW*	1 - 3	2028	**3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 23
P.2.4	Adopt campaign to encourage helmet-wearing for all individuals operating bicycles or shared micromobility devices that are electronically assisted up to speeds of 25 MPH.	**TD**; *C&E*	10+	2040	**3, 4, 5**; *7*	Policy Actions and Constraints Report, 45
P.2.5	Create Bicycle and Pedestrian Advisory Board or similarly-named citizen advisory committee to Transportation Department that can do further research, outreach, and advisement to City Council on important but delicate issues such as helmet policies and other issues affecting pedestrians and cyclists.	**TD**; *GA*	10+	2040	**3, 4, 5**; *7*	Policy Actions and Constraints Report, 45
P.2.6	Start an educational campaign to teach residents how to properly lock their bikes and what to do when their bike is stolen. Campaign, at a minimum, should include bike theft educational material on easy to find and accessible website.	**TD**; *SAPD*	10+	2040	**3, 4, 5**; *10*	Policy Actions and Constraints Report, 62

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
P.2.7	Consider partnering with a bike registry such as 529 Garage to improve ability to locate and return stolen bikes.	**TD**	1 - 3	2028	**3, 4**; *10*	Policy Actions and Constraints Report, 62
P.2.8	Provide residents with more bike parking facilities to secure bikes, either through public bike parking programs or bike parking minimums for nonresidential developments.	**TD**; *CCDO, PW, DSD*	10+	2040	**1, 2, 3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 62
P.2.9	Amend UDC to provide incentives to encourage the construction and provision of shower and changing facilities in new developments or significant redevelopments.	**DSD**; *TD*	10+	2040	**1, 2, 3**; *6, 7, 8, 10*	Policy Actions and Constraints Report, 62
P.2.10	Perform comprehensive sidewalk assessment to determine existing conditions and maintenance cost.	**TD**; *PW*	1 - 3	2028	**1, 2, 3;** *6, 7, 8, 10*	Policy Actions and Constraints Report, 23
P.2.11	Create sidewalk maintenance fund to further support City's existing Sidewalks Program within its 5-year IMP.	**TD**; *PW*	3 - 5	2030	**1, 2, 3; 6, 7, 8, 11**	Policy Actions and Constraints Report, 23
P.2.12	Conduct city-wide assessment of existing utilities to determine if there are any poles, storm drains/grates, fire hydrants, or other utilities obstructing bicycle or pedestrian traffic and designate them for relocation or removal.	**TD**; *PW, Planning*	3 - 5	2030	**1, 2, 3**; *6, 7, 8*	Policy Actions and Constraints Report, 23
P.2.13	Create citywide Idaho stop educational campaign targeting drivers and cyclists and provide signage at intersections.	**TD**; *C&E, PW, GA*	5 - 10	2035	**3, 4, 5;** *7, 10*	Policy Actions and Constraints Report, 52
P.2.14	Create citywide educational campaign to raise public awareness about the new speed limit.	**TD**; *C&E*	5 - 7	2032	**3, 4, 5;** *7, 10*	Policy Actions and Constraints Report, 36
P.2.15	Implement community-led campaigns to identify streets where speed limit signage needs to be updated.	**TD**; *C&E*	5 - 7	2032	**3, 4, 5;** *1, 2*	Policy Actions and Constraints Report, 34
P.2.16	Create a citywide educational campaign on about the law prohibiting parking, driving, or idling in bike lanes.	**TD**; *C&E*	1 - 3	2028	**3, 4, 5;** *7*	Policy Actions and Constraints Report, 57

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
P.5.1	Acquire 3-5 additional mini-sweepers to maintain cleared bike facilities	**TD**; *PW*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 11
P.5.2	Amend streets sweeping practices to prioritize bike lanes and buffered bike lanes.	**TD**; *PW*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.5.3	Partner with local nonprofits to implement a human powered sweeper program.	**TD**; *PW, C&E*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.5.4	Modify the 3-1-1 app to provide a section specific to all bike related reporting including sweeping, repaving, and other obstructions.	**TD**; *PW, C&E*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.5.5	Utilize Electric Mini Sweeper to target protected bike lanes and two-way cycle tracks and implement new mini-sweeper practices to deploy mini-sweepers monthly on protected bike facilities	**TD**; *PW, Parks*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.5.6	Analyze running slope of roadways with bike facilities for bottom of dip to pinpoint likely areas for debris accumulation. Deploy additional street sweeping outside of quarterly schedule in these areas.	**TD**; *PW*	1 - 3	2028	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.5.7	Ensure timely bike infrastructure maintenance by consistently restriping and sweeping bike infrastructure.	**TD**; *PW*	3 - 5	2030	**3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10-11
P.5.8	Consider stained concrete solutions to minimize striping maintenance on all future bike facilities and existing bike facility reconstructions.	**PW**; *TD*	1 - 3	2027	**1, 2, 3**; *6, 7, 8, 10*	Maintenance Cost Estimation Memorandum, 10
P.3.1	Partner with existing nonprofits, economic development organizations, and other parties to identify entities who can spearhead and coordinate implementation of BNP through its 25-year implementation timeframe.	**TD**; *C&E*	continual, not sure		**3, 4, 5;** *6, 7, 8, 10*	Funding Strategy Plan, 22
P.3.2	Proactively and strategically apply for federal grants for a total of $2 to $7 million in federal discretionary funds each year.	**TD**; *GA*	1	Recurring, yearly	**1, 2, 3**; *6, 7, 8, 10*	Funding Strategy Plan, 25

#	Implementation	Lead; *Supporting*	Timeframe (Years)	Target Year	Metric(s); *Indicator(s)*	Origin, Page Number
P.3.3	Create a city team specific to implementing the BNP, with dedicated staff and resources.	**TD**	1 - 5	2030	**3**; *1, 2*	Funding Strategy Plan, 26
P.3.4	Consider creating a nonprofit or philanthropic entity that is dedicated to building out the recommended network, then partner with the City to implement projects.	**TD**	1 - 5	2030	**3**;	Funding Strategy Plan, 22
P.2.4	Contract qualified consultant to execute planning and engineering components of Quick Builds for Safe Communities program.	**TD**; *GA*	1 - 3	2028	**3**; *1, 2*	Safe Streets For All Application and Award, 2
P.7.1	Report semi-annually the number of serious and fatal cyclist-involved crashes	**TD**	1	Recurring	**3**; 4, 5	Performance Metrics and Targets Memorandum, 3
P.7.2	Annually, produce a report covering the number of roadway and intersection projects that have received bike improvements across implementing agencies.	**TD**	1	Recurring	**3**; *1, 2*	Performance Metrics and Targets Memorandum, 1-2
P.7.3	Annually, produce a report on the number of policies implemented, grants received, and programs created pertaining to bike infrastructure.	**TD**	1	Recurring	**1**; *3*	Performance Metrics and Targets Memorandum, 2
P.7.4	In each subsequent update to BNP, include data on the number of public engagement events held and the number of residents reached by these events.	**TD**	1	Recurring	**3;** *4, 5*	Performance Metrics and Targets Memorandum, 2-3
P.7.5	Annually, produce a report on the share of bike commuters, detailing both percentage, count of trips connected by VIA, reductions in VMT, and bike count location data.	**TD**	1	Recurring	**1**; *6, 8, 9, 10*	Performance Metrics and Targets Memorandum, 3-4
P.7.6	Annually, produce a report on the percentage of San Antonians living with chronic diseases.	**Sustainability** ; *TD*	1	Recurring	**3**; *11*	Performance Metrics and Targets Memorandum, 4
P.7.7	Annually, produce a report of the number of bike-related crashes in San Antonio	**TD**	1	Recurring	**3**; *7*	Performance Metrics and Targets Memorandum, 3