

May 12, 2023

## MEMORANDUM

**To:** City of Colorado Springs  
**From:** Platte Avenue Corridor Study Team  
**Re:** Development of Corridor Solutions  
Platte Avenue Corridor Study Character Areas

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The purpose of the solution development activities was to identify a wide range of solution options to address needs, deficiencies, and opportunities along the corridor. Solution options were identified through a variety of inputs including:

- Technical analyses
- Recommendations from previous plans and studies
- Inputs from City staff and the public
- Experience and professional judgment of the project team

This memo identifies the comprehensive list of corridor-wide and character area-specific solution options considered in the study. The Solution Development phase includes both how and where solution options were identified, as well as the initial high-level testing of solutions for feasibility and alignment with the Platte Avenue Corridor Study (PACS) functional objectives and ambitions.

### Technical Analyses

A series of technical analyses were conducted including traffic analyses, travel patterns analyses, and economic and land use analyses. The technical analyses helped identify additional needs and opportunities to be considered in relation to the ambitions and often identified potential solutions to address them. For example, traffic analyses at key intersections highlighted current and future capacity challenges for the study to consider, in line with vehicular ambitions. Similarly, economic and land use analyses identified opportunity areas throughout the corridor where transportation investments could support economic growth.

Below is a summary of the technical analyses completed and the needs and opportunities, as well as potential solution options, identified from the analyses that were brought forward for consideration on the study.

### Traffic Analyses

Traffic forecasting and analyses were completed to evaluate the current and future operational condition of Platte Avenue and to identify potential improvement needs. Weekday AM and PM peak hour traffic counts conducted in the Year 2020 were adjusted for COVID impacts, increased to 2022 levels, and then further projected to Year 2045 conditions. An initial review of link traffic volumes was performed to evaluate the general use levels along Platte Avenue.

**Table 1** depicts these levels compared with the approximate capacity of a 4- or 6-lane Platte Avenue.

**Table 1. Traffic Levels and Lane Capacities – Platte Avenue**

Note for **Traffic Volumes**: The capacity of a 2-lane roadway is approximately 18,000 vehicles per day (vpd)

Segment	2022 Average Daily Traffic (ADT) Volume	Excess Capacity (2022)	Projected 2045 ADT	Excess Capacity (2045)
Cascade Ave to Tejon St	7,500 vpd	10,500	11,100 vpd	6,900
Tejon St to Nevada Ave	7,700 vpd	10,300	12,100 vpd	5,900
Nevada Ave to Weber St	10,200 vpd	7,800	16,100 vpd	1,900
Weber St to Wahsatch Ave	11,400 vpd	6,600	17,900 vpd	100

Platte Avenue currently provides 4 travel lanes throughout the majority of the study corridor with the exception of the portion between Boulder Street and Academy Boulevard. As shown in **Table 1**, link traffic volumes along Platte Avenue west of Union Boulevard are projected to remain within 4-lane capacity, while volumes increase farther east exceed the capacity of a 4-lane Platte Avenue. While these generalized capacity comparisons provide a reasonable initial assessment of traffic flow conditions, peak hour intersection analyses are necessary to identify the extent of current and future congestion within the Platte Avenue study corridor.

Peak hour intersection traffic operations analyses were conducted to understand where there might be current and future traffic operations bottlenecks and needs along the corridor. Specifically, the existing and future analyses identified intersections where traffic operations are or will be considered unacceptable based on the City’s traffic operations standards, which identify a minimum intersection operational goal of Level of Service (LOS) D or better.

In the existing (2022) conditions, the following improvements were identified as options to improve existing operations:

- Optimize traffic signal timing splits for Platte Avenue intersections at Circle Drive and Murray Boulevard to decrease overall intersection and approach-specific delays.
- Provide northbound and southbound right turn overlap phasing at Platte Avenue/Circle Drive.
- Convert the WB left protected-only left turn traffic signal phasing to protected/permitted at Boulder Street/Union Boulevard.
- Add overlap right turn traffic signal phasing on the SB right turn lane at Boulder Street/Union Boulevard.
- Reconstruct the Platte Avenue & Union Boulevard intersection to provide:
  - ▶ Dual eastbound (EB) left turn lanes.
  - ▶ Two EB through lanes with a shared through/right turn lane.
  - ▶ Two westbound (WB) left turn lanes.
  - ▶ A southbound (SB) left turn lane.
- Reconstruct the Boulder Street & Union Boulevard intersection to provide a NB left turn lane.

For projected 2045 traffic conditions, the following solutions were considered to address intersections where anticipated delay is projected to be at unacceptable levels:

- Optimize traffic signal timing splits at all intersections along Platte Avenue for the entirety of the corridor.
- Reconstruct the Platte Avenue/Circle Drive intersection to provide:
  - ▶ Dual SB left turn lanes.
  - ▶ three NB through lanes.
  - ▶ A separate WB right turn lane with overlap right turn traffic signal phasing.
- Reconstruct the Platte Avenue/Murray Boulevard intersection to provide:
  - ▶ A third EB and WB through lane and remove the EB and WB acceleration lanes from the NB and SB right turns.
  - ▶ Dual WB left turn lanes.
  - ▶ NB and SB overlap right turn phasing.
- Reconstruct the Platte Avenue/Wooten Road intersection to provide:
  - ▶ A third EB through lane by converting the EB right turn lane to a shared EB through/right turn lane and removing the EB acceleration lane from the NB right turn.
  - ▶ A third WB through lane by converting the WB right turn lane to a shared WB through/right turn lane and remove the WB acceleration lane from the SB right turn.
- Reconstruct the Platte Avenue/Union Boulevard intersection to provide:
  - ▶ Three EB, WB, NB, and SB through lanes with shared right turns.
  - ▶ Dual NB left turn lanes.
  - ▶ Dual SB left turn lanes.
- Reconstruct the Boulder Street/Union Boulevard intersection to provide three NB and SB through lanes with shared right turn lanes.

## Economic Development Analyses

Economic development analyses revealed opportunities for infrastructure investments to contribute to economically beneficial redevelopment; two significant opportunities identified in Knob Hill and Citadel Mall are outlined in dashed red lines on **Figure 1**. These areas were selected given the potential positive impact each can have on the overall character and experience of the corridor, as well as the existing land uses and opportunities for future commercial and mixed-use redevelopment. The State of the Corridor document provides more information about the market study, how these opportunities were identified and other redevelopment or economic and social benefit potentials within the corridor. This analysis includes evaluating these alternatives from the perspective of Community Benefits and Economic Benefits related to tax revenue and future land values.

**Figure 1. Key Redevelopment Areas**



## Initial Testing of Solution Options

This section describes the comprehensive suite of multimodal solution options identified to address needs and leverage opportunities in each character area. For each solution option, there is a discussion about technical analyses that were completed to test general feasibility, mainly related to whether the option would maintain acceptable traffic conditions along the corridor. There is also a discussion about testing each solution’s alignment against the various ambitions for that character area. These two initial tests helped screen out solutions that were either not feasible to implement or that did not align with character area ambitions. The rest of the solutions that were considered feasible and in line with corridor ambitions were advanced to the Solution Refinement activities.

### Downtown

The ambitions for the Downtown area are reiterated on **Figure 2**.

**Figure 2. Downtown Ambitions**

Ambition Category	Ambition
<b>Vehicular</b> 	Provide capacity for forecast future traffic Maintain functionality of downtown’s street grid Improve operations at the Platte Avenue and Nevada Avenue intersection
<b>Transit</b> 	Strengthen connection to Downtown Station
<b>Bicycle and Pedestrian</b> 	Improve pedestrian safety near Palmer High School Direct connections to the Monument Creek Trail Prioritize the pedestrian experience

**Ambition Category**

**Ambition**

**Community**



Integrate with Acacia Park  
Add to the vibrancy, activity, and artfulness of downtown

**Surrounding Land Uses**

Support current land uses



These ambitions support a Downtown character area with increased pedestrian priority and destination appeal, a functional grid supporting vehicular circulation, multimodal connectivity and safety and support for flourishing local land uses. Potential solutions within the Downtown character area are identified as follows.

### Platte Avenue Right-of-Way Reallocation

**Technical Input:** Existing traffic counts and calculations of level of service (LOS) indicate that Platte Avenue in the Downtown character area operates with excess capacity, providing an opportunity to consider a reallocation of the right-of-way to better align capacity with demand.

As shown in **Table 1**, between Cascade Avenue and Wahsatch Avenue, Platte’s current and projected future traffic volumes indicate that two travel lanes (one lane in each direction) with a center turn lane and additional turning lane accommodations at intersections is sufficient to carry current and future traffic demand.

**Alignment with Ambitions:** This proposed configuration would allow for between 10 to 20 feet of space to be given back to the sidewalks and streetscapes along the corridor, consistent with the character area ambitions related to improving pedestrian safety and the pedestrian experience and supporting current land uses.

### Bijou/Kiowa Right-of-Way Reallocation

**Technical Input:** Existing traffic counts and operations analyses indicate an opportunity for right-of-way reallocation on the one-way couplet of Bijou Street (westbound) and Kiowa Street (eastbound).

The current and projected future traffic volumes indicate that two travel lanes, with some additional turning lane accommodations at major intersections in the future, is sufficient to carry current and future traffic demand if the current one-way configurations for both Bijou and Kiowa Street are maintained.

Prior to this study, analyses and modeling were conducted in 2018 to understand the feasibility of converting Bijou and Kiowa to two-way streets, instead of their current one-way configurations. The previous analysis considered two alternatives for implementing a two-way conversion but found that neither alternative was considered acceptable based on impacts to traffic operations (would result in excessive queueing or delay), capacity and safety degradation at intersections, or excessive impacts to land uses (would require reconstruction of multiple intersections and of Cascade Avenue). As such, a two-way configuration of Bijou and Kiowa was not considered further in this Platte Avenue Corridor Study.

**Alignment with Ambitions:** This travel lane configuration, while also retaining the bike lane and providing parallel parking on both sides of the streets, would still allow for between 10 and 20 feet of space to be

given back to the sidewalk and streetscape of both Bijou and Kiowa. This would enhance the pedestrian environment and align with ambitions related to prioritizing pedestrian safety and experience and supporting current land uses.

### Platte Avenue and Nevada Intersection Improvements

**Technical Inputs:** The intersection of Platte Avenue/Nevada Avenue currently operates as a signalized intersection with the General Palmer statue in the middle. The statue location causes left-turning drivers to drive past the statue to make a left turn, which is an unorthodox and more difficult maneuver. Another challenge at this intersection is related to the high number and concentration of pedestrian crossings at this intersection coming from Palmer High School on the northeast corner and from Acacia Park on the southwest corner.

Traffic engineering principles indicate a safer configuration for both vehicle movement and pedestrian crossings would be to restrict left turns at the intersection or potentially construct a roundabout. The analysis indicated that the roundabout configuration that would maintain acceptable LOS in the future is one with a single-lane eastbound and westbound approach and two-lane approaches on north-south Nevada Avenue.

**Alignment with Ambitions:** A specific ambition of this character area is to improve operations at this intersection. The solution option to restrict left turns at the intersection would align with ambitions related to improving pedestrian safety, as fewer turning movements at intersections makes it easier and safer for pedestrians to navigate the intersection. The roundabout option that includes specific treatments to facilitate pedestrian crossings at each leg of the roundabout would also align with traffic and safety ambitions.

However, while a single lane roundabout would align with multiple ambitions for vehicle movement, pedestrians, and land uses, the necessary multi-lane roundabout, as identified in the analysis, would not provide that same alignment and would instead likely be detrimental to some of the ambitions.

### Acacia Park Frontage Enhancements

Acacia Park provides recreational green space, central to Downtown. The Acacia Park frontage offered by Platte Avenue represents an opportunity to enhance the attractiveness and interest of the park and complement Downtown Colorado Springs as a destination. Currently, Platte Avenue past the park consists of 5 lanes (2 through lanes plus a center left turn lane) and adjacent on-street parking. Both the travel lanes and on-street parking are underused. A Platte Avenue right-of-way reallocation in combination with flexible street amenities would fulfill this opportunity. This effort would include urban design enhancements to the Platte Avenue/Tejon Street intersection to complement development patterns at this location.

**Alignment with Ambitions:** Creating a flexible street frontage ties to character area ambitions of prioritizing the pedestrian experience, integrating with Acacia Park, and supporting current land uses.

### Platte/I-25 Connectivity Enhancements

**Technical inputs:** One of the functional objectives of the study is to maintain east-west connectivity of the Platte Avenue corridor. A specific area of interest related to this east-west connectivity is the connection between Platte Avenue and I-25 at the western limits of the corridor. While traffic and travel pattern analyses indicate that the downtown grid street network adequately accommodates vehicular travel demand between I-25 and Platte Avenue in both directions, analyses considered ways to emphasize the character area ambitions of maintaining functionality of downtown grid and providing capacity for future traffic.

To provide a more efficient connection from I-25 to Platte Avenue, geometry modifications at the Bijou Street and Cascade Avenue intersection were analyzed. A single eastbound approach could be considered for Bijou Street to Cascade Avenue to provide a more efficient connection to Platte Avenue. If this single lane eastbound Bijou Street connection to Cascade Avenue were provided, the eastbound lane would need to travel south of a new separate westbound left turn lane for access to Sierra Madre Street in the western one-way diverging location. Analyses show this configuration could be accommodated; however, much of the existing triangle shaped median island in the Bijou Street eastbound reroute would need to be modified.

Analyses also showed that that a single eastbound left turn/right turn lane at the Bijou Street/Cascade Avenue intersection would operate acceptably with existing conditions. If 2045 volumes are realized, then triple northbound left turn lanes may be needed at Bijou Street/Cascade Avenue intersection with the eastbound approach lane. If this occurs, then this option may no longer be feasible as widening of Bijou Street would be required.

Independently, at the Platte Avenue/Cascade Avenue intersection, a channelized northbound right turn lane with free movements could be incorporated since there are two eastbound receiving lanes along Platte Avenue with only one eastbound through lane needed from the southbound left turn or eastbound through at this intersection.

**Alignment with Ambitions:** These proposed geometric changes align with the vehicular ambition of maintaining functionality of the downtown grid and the overall functional objective of maintaining east-west connectivity.

### Cascade Avenue Multimodal Improvements

**Technical Inputs:** Another analysis considered how reallocation of the existing Cascade Avenue right-of-way between Boulder Street and Kiowa Avenue could support improved vehicular connectivity between Platte Avenue and I-25 while also improving bicycle connectivity and the pedestrian realm along Cascade Avenue and at major intersections.

The analysis looked at the feasibility of providing greater separation on Cascade Avenue between westbound traffic destined for W Bijou Street and I-25 using a channelized right-turn lane. It was noted that this type of channelized turn lane previously existed at this intersection and was removed during a previous intersection reconstruction. The analysis included considerations for how to reimplement the lane so that it does not enable high vehicle speeds and does not create a barrier to bicycle and pedestrian movement along Cascade.

Another consideration was how to provide greater separation between vehicular traffic and bicycle traffic on Cascade Avenue either through enhancing the existing facilities to provide physical barriers between the bike lane and travel lanes or through reconfiguring the existing roadway to move the location of the bike lane. Finally, options for how intersections and be more easily navigated by pedestrians and bicyclists were explored in the conceptual analysis.

**Alignment with Ambitions:** This proposed street configuration change along Cascade Avenue would address the functional objective of east-west connectivity while also emphasizing some of the bicycle and pedestrian-related ambitions for downtown relative to safety (improve pedestrian safety), connectivity (connections to the Monument Creek Trail) and the pedestrian experience (prioritize the pedestrian experience).

## Middle Shooks Run

The ambitions for the Middle Shooks Run Character Area are reiterated on **Figure 3** :

**Figure 3. Middle Shooks Run Ambitions**

Ambition Category	Ambition
 <b>Vehicular</b>	Align travel speeds with neighborhood character Provide capacity for forecasted future traffic Intersection improvements at Union Boulevard
 <b>Transit</b>	Enhance transit stop accessibility and safety Improve travel time
 <b>Bicycle and Pedestrian</b>	Complete missing sidewalks Enhance connections across Platte Avenue
 <b>Community</b>	Support and enhance neighborhood character Mitigate traffic impacts
 <b>Surrounding Land Uses</b>	Support residential land uses Preserve parking

These ambitions support a Middle Shooks Run character area with adequate traffic capacity, improved north-south non-motorized connections and a Platte Avenue right-of-way compatible with established land uses in this residential neighborhood. Potential solutions within the Middle Shooks Run character area are identified as follows.

### Boulder Street and Platte Avenue One-way Configuration

**Technical Inputs:** This alternative was considered to potentially improve operations of the Platte Avenue and Union Boulevard intersection, which was found to operate with long delays and poor LOS in 2045 with the existing intersection configuration. Platte Avenue would be the eastbound roadway while Boulder Street would be the westbound roadway, as this directional configuration works best at the existing Platte Avenue and Boulder Street intersection to the east.

More efficient traffic flow and safer intersection operations are possible in a one-way configuration because there are fewer movements to accommodate at intersections (eliminating left turn movements). One-way configurations are generally 15 percent more efficient in terms of moving traffic than two-way configurations. Because of the improved operational efficiency, both Platte Avenue and Boulder Street would require only two travel lanes in each direction to accommodate current and projected future traffic demand.

**Alignment with Ambitions:** The analyses for converting Platte Avenue and Boulder Street into a one-way couplet pointed to the ability to address all the character area ambitions for the Middle Shooks Run area:

- Because the current roadway configuration operates with excess capacity, the reconfiguration does not detract from the ambition related to providing capacity for future traffic.
- The reallocation of about 50 feet of space would be given back to the sidewalks and streetscapes along Platte Avenue between El Paso Street and Hancock Street, aligning with ambitions related to completing missing sidewalks, enhancing neighborhood character, and supporting residential uses.
- The expansion of on-street parking along the entirety of Platte Avenue, which is not there today, aligns with the ambition to preserve parking and support residential uses.
- The provision of an alternate use lane for dedicated transit allows for future right-of-way flexibility to align with transit-related ambitions and ambitions to provide capacity for future traffic.
- Allocation of space for a separated two-way cycle track along Platte Avenue would provide a dedicated east-west bicycle facility in the corridor, addressing the corridor-level functional objective of providing east-west multimodal connectivity.
- Traffic speeds can be better managed in one-way configurations because traffic signal timing can be set to promote an appropriate speed in a single direction of travel, rather than having to balance the needs of multiple directions. This aligns with the ambition of aligning travel speeds with the adjacent neighborhood or commercial character, depending on location in the corridor.
- Safer crossings could be possible for pedestrians and bicyclists at north-south streets, aligning with the ambition to enhance connections across Platte Avenue and mitigation traffic impacts:
  - ▶ Traffic is coming from only one direction instead of two, making crossings easier to navigate and allowing for more frequent pedestrian phases at signals.
  - ▶ At the Platte/Union intersection, on the north-south the Platte/Union crossing distance across Platte is reduced by 25-feet with the elimination of left turn lanes.

## Boulder Street Right-of-Way Reallocation

**Technical Inputs:** Between Wahsatch Avenue and Platte Avenue, Boulder Street's current and projected future traffic volumes indicate that two travel lanes (one lane in each direction) with a center turn lane and additional turning lane accommodations at intersections is sufficient to carry current and future traffic demand.

**Alignment with Ambitions:** Reducing the number of vehicle travel lanes from five to three (including the center turn lane) would allow between 10 feet and 20 feet of space to be given back to the sidewalks and streetscapes along the corridor, consistent with the ambitions related to improving pedestrian safety and the pedestrian experience and supporting current land uses.

Lane reallocation on Boulder Street would also afford the designation of both dedicated bicycle lanes and dedicated transit lanes along the corridor, which would align with the character area's transit-related ambitions, as well as the overall functional objective of supporting multimodal east-west mobility along the corridor. Additionally, the addition of other uses in the right-of-way (more pedestrians, bicyclists, and transit vehicles and riders) would require drivers to be more aware of their surroundings, and could, in turn, support reduced vehicle speeds, which would align with ambitions for aligning travel speeds and further supporting neighborhood character.

## El Paso Bridges and Shooks Run Trail Crossing Improvements

There are three existing structures at the intersection of El Paso Street and Platte Avenue that elevate the west frontage road, the Shooks Run Trail, and El Paso Street over Platte Avenue. All three of these structures, which include bridges and associated retaining walls, require improvement to address structural aging and some physical damage to the easternmost structure that has had El Paso Street closed to traffic since August 2021. As such, there was a need to provide specific exploration of this area to identify options for addressing structural improvements that could also advance additional ambitions of the Middle Shooks Run character area, such as enhancing connections across Platte Avenue, enhancing the neighborhood character, mitigating traffic impacts (mainly speed and noise at this location), and preserving parking.

**Technical Inputs:** Key inputs included a structural analysis indicating the need to replace or rehabilitate the existing structures, community input on the functions and uses of the overpass (including connectivity of El Paso Street, separation of the trail, and travel/access expectations for homes), and traffic analyses on traffic capacity requirements for Platte Avenue. Three solution options were considered (in no particular order):

1. Eliminate the grade separation between El Paso Street and Platte Avenue to bring Platte Avenue up to grade so that the Platte/El Paso intersection and the frontage roads that currently provide access to the homes along Platte would be at the same grade.
2. Replace the three deficient structures and make necessary improvements to retaining walls to reinstate the current configuration of this intersection and trail crossing, including reopening El Paso Street as a north-south roadway.
3. Replace existing structures to support a new larger, single bridge deck (rather than multiple decks) that supports expanded space and functionality on the bridge deck.

**Alignment with Ambitions:** Solution Option 1 would eliminate the need to rehab or replace any of the structures and could provide opportunities to align with the character area ambitions related to aligning travel speeds with neighborhood character and mitigating traffic impacts. This option would require reconsideration of the Shooks Run Trail grade separation by either making the trail crossing of Platte an at-grade crossing or creating an underpass.

Solution Option 2, re-instating the current configuration, aligns with character area ambitions related to enhancing connections across Platte, supporting residential land uses, and preserving parking.

Solution Option 3 supports maintaining existing functions of the existing frontage road for home access and the existing separated trail crossing. It also allows for expanded greenspace or community space on the overpass. This would align with character area ambitions of enhancing connections across Platte, supporting and enhancing neighborhood character, and supporting residential land uses.

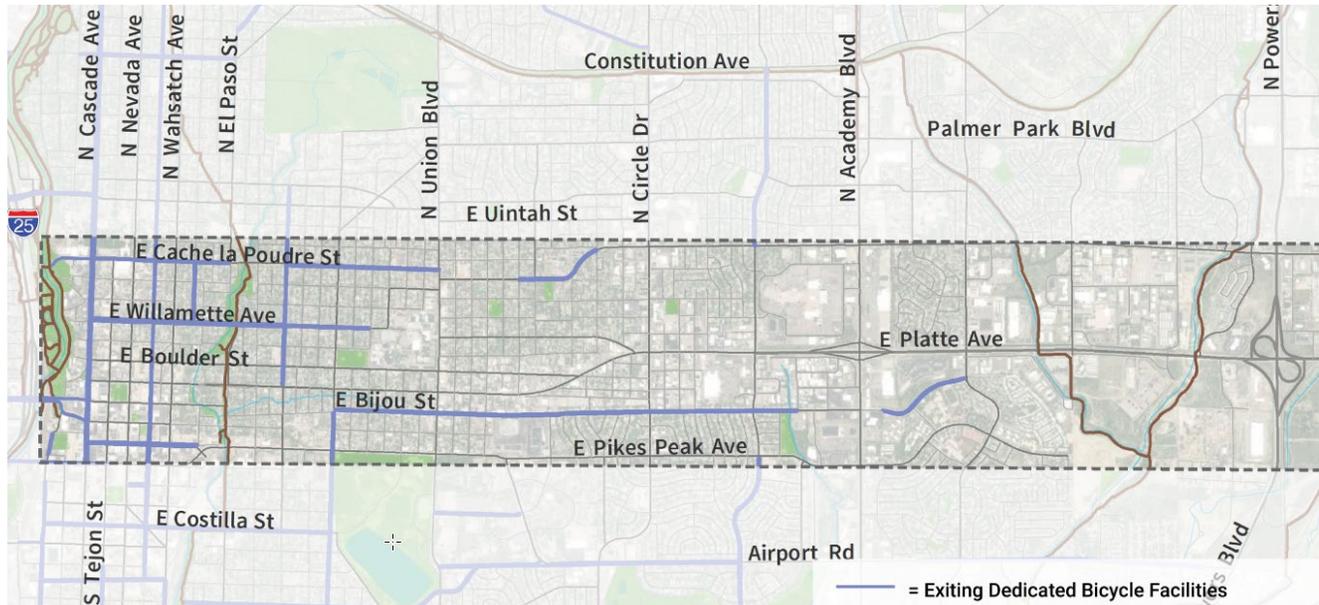
## Bicycle Network Connectivity

**Technical Inputs:** Review of the existing bicycle facility network in Middle Shooks Run highlights discontinuities and gaps to both the north-south and east-west bicycling network in the corridor.

The community-centric nature of a neighborhood like the Middle Shooks Run character area, or a pedestrian-scale commercial corridor like is desired in Knob Hill, often results in greater bicycle and pedestrian activity, making these discontinuities in infrastructure more prominent.

From an east/west perspective, there are discontinuities east of Union Blvd, shown on **Figure 4**. There is also no bicycling infrastructure generally east of Academy Boulevard.

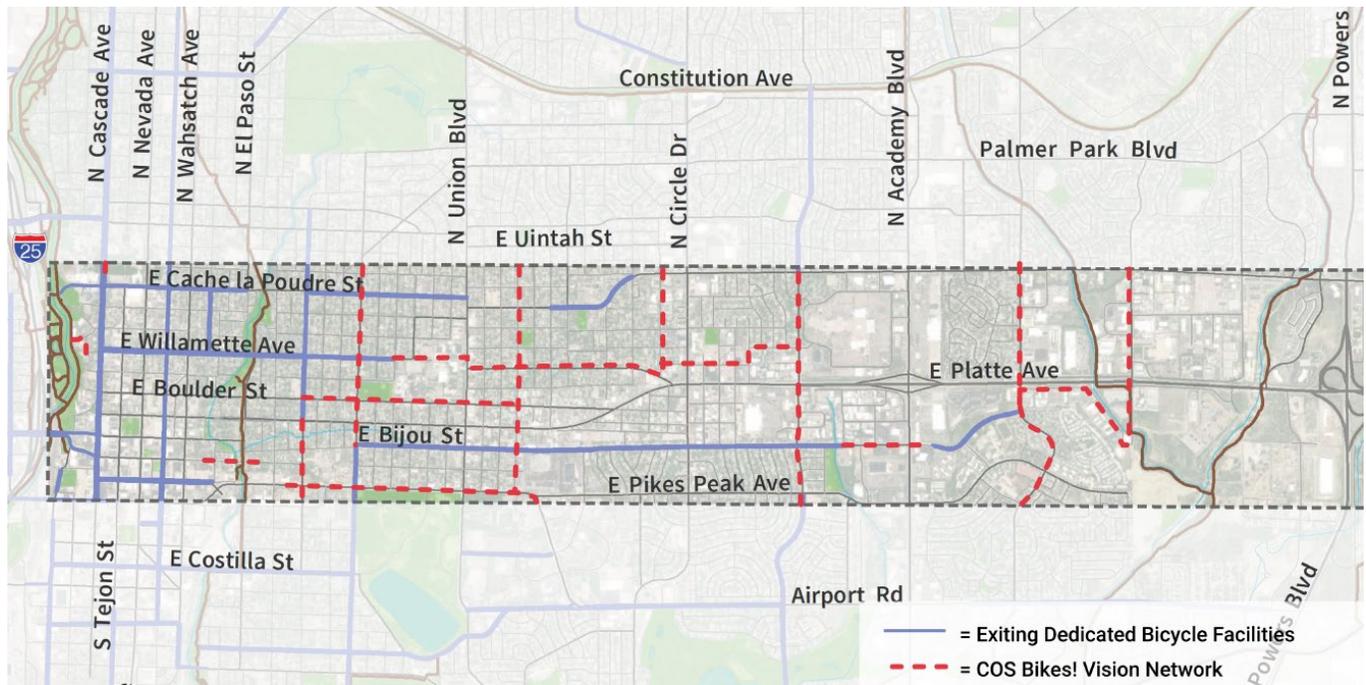
**Figure 4. Existing Bicycle Facility Network**



Options that were considered to fill in gaps and provide east-west connectivity for bicycling infrastructure include:

- Providing a direct, continuous bicycling facility along Platte Avenue for the length of the corridor. Because of the high volumes of traffic on Platte Avenue, this solution would take the form of a separated facility, such as a multiuse path.
- Filling in gaps in existing facilities along the Bijou Street alignment, mainly west of Hancock Avenue.
- Extending the existing facilities along Willamette Avenue to Chelton, in line with the COS Bikes! Vision Network (see **Figure 5**).
- Considering implementing new bicycling facilities along Boulder Street and subsequently on north-south facilities including Hancock Avenue and Iowa Street to connect to existing facilities on Bijou Street to provide connectivity to the east (also in line with the COS Bikes! Vision Network).

**Figure 5. COS Bikes! Vision Network Connections**



From a north-south perspective, a few of the major north-south network gaps are planned to be addressed through ConnectCOS investments, including facilities for Chelton Road and Iowa Street, both of which are identified as key connections in COS Bikes! However, this study is equipped to consider the preferred recommendation for establishing a north-south connection between the US Olympic and Paralympic Training Center (USOPC) and Memorial Park. Three options to make this connection include:

- Construct a new shared-use path along the west side of Union Boulevard
- Designate a bike boulevard along Meade Avenue.
- Implement a bike lane on Farragut Avenue.

**Alignment with Ambitions:** Solution options to address bicycle network gaps and create a more continuous and cohesive network align with ambitions for multiple character areas, including enhancing connections across Platte Avenue, enhancing access to businesses, and connecting to existing and future trails. An enhanced bicycling network will also support other ambition areas, including:

- Transit-related ambitions of enhancing transit stop accessibility and safety
- Community-centric ambitions of supporting and enhancing neighborhood characters and planning for future functions of Platte Avenue
- Surrounding land use ambitions of supporting residential and appropriate scale land uses, and making infrastructure investments to catalyze private investment

## Knob Hill

The ambitions for the Knob Hill character area are reiterated on **Figure 6**:

**Figure 6. Knob Hill Ambitions**

Ambition Category	Ambition
 Vehicular	Align travel speeds with a walkable commercial area Provide capacity for forecasted future traffic
 Transit	Enhance transit stop accessibility and safety Improve travel time
 Bicycle and Pedestrian	Complete missing sidewalks Enhance connections across Platte Avenue Reduce pedestrian driveway conflicts Enhance access to businesses
 Community	Support Knob Hill as a destination Allocate more space for pedestrians
 Surrounding Land Uses	Support scale of current uses Preserve parking Investments in infrastructure to catalyze private investment

These ambitions support a Knob Hill character area with adequate traffic capacity, improved north-south non-motorized connections, and a Platte Avenue right-of-way compatible with established land uses in this mixed-use neighborhood with high potential for effective economic development. Potential solutions within the Knob Hill character area are identified as follows.

### Boulder Street and Platte Avenue One-way Configuration

**Technical Inputs:** This analysis was described in detail in the “Middle Shooks Run” section but was also an essential analysis for meeting the ambitions of the Knob Hill area.

**Alignment with Ambitions:** In addition to alignment with ambitions highlighted in the previous discussion of this solution option, the one-way configuration would address all the Knob Hill character area ambitions:

Because of the improved operational efficiency of a one-way configuration, both Platte Avenue and Boulder Street would require only two travel lanes in each direction.

- The reallocation of space on Platte Avenue could be given back to the sidewalks and streetscapes to allow for between 10- and 16-foot sidewalk in the Knob Hill area, aligning with ambitions related to completing missing sidewalks, enhancing access to businesses, allocating more space for pedestrians, and supporting the scale of current uses.

- The expansion of on-street parking along the entirety of Platte Avenue would align with the ambition to enhance access to businesses, supporting Knob Hill as a destination, and the ambition to preserve parking.
- The provision of an alternate use lane for dedicated transit supports both the transit-related ambitions of the area and creates opportunity to catalyze transit-oriented development in support of the ambition related to catalyzing private investment and supporting Knob Hill as a destination.
- New signalized intersections at Iowa and at Willamette provide more locations for pedestrians and bicyclists to safely cross the road, aligning with ambitions related to enhancing connections across Platte Avenue, enhancing access to businesses, and supporting the scale of current uses.

### Platte/Union Intersection Improvements

**Technical Inputs:** The Platte Avenue and Union Boulevard intersection improvement plays a key role in the one-way couplet design of Platte Avenue and Boulder Street. Traffic analysis presented previously shows unacceptable levels of service at this intersection and recommendations to reconstruct the intersection to add additional travel lanes both in the near-term and long-term horizons to provide acceptable performance.

**Alignment with Ambitions:** The intersection was identified as a primary opportunity to improve capacity for current and future conditions, aligning with the vehicular ambition for the character area.

### Knob Hill Land Use/Redevelopment Scenarios

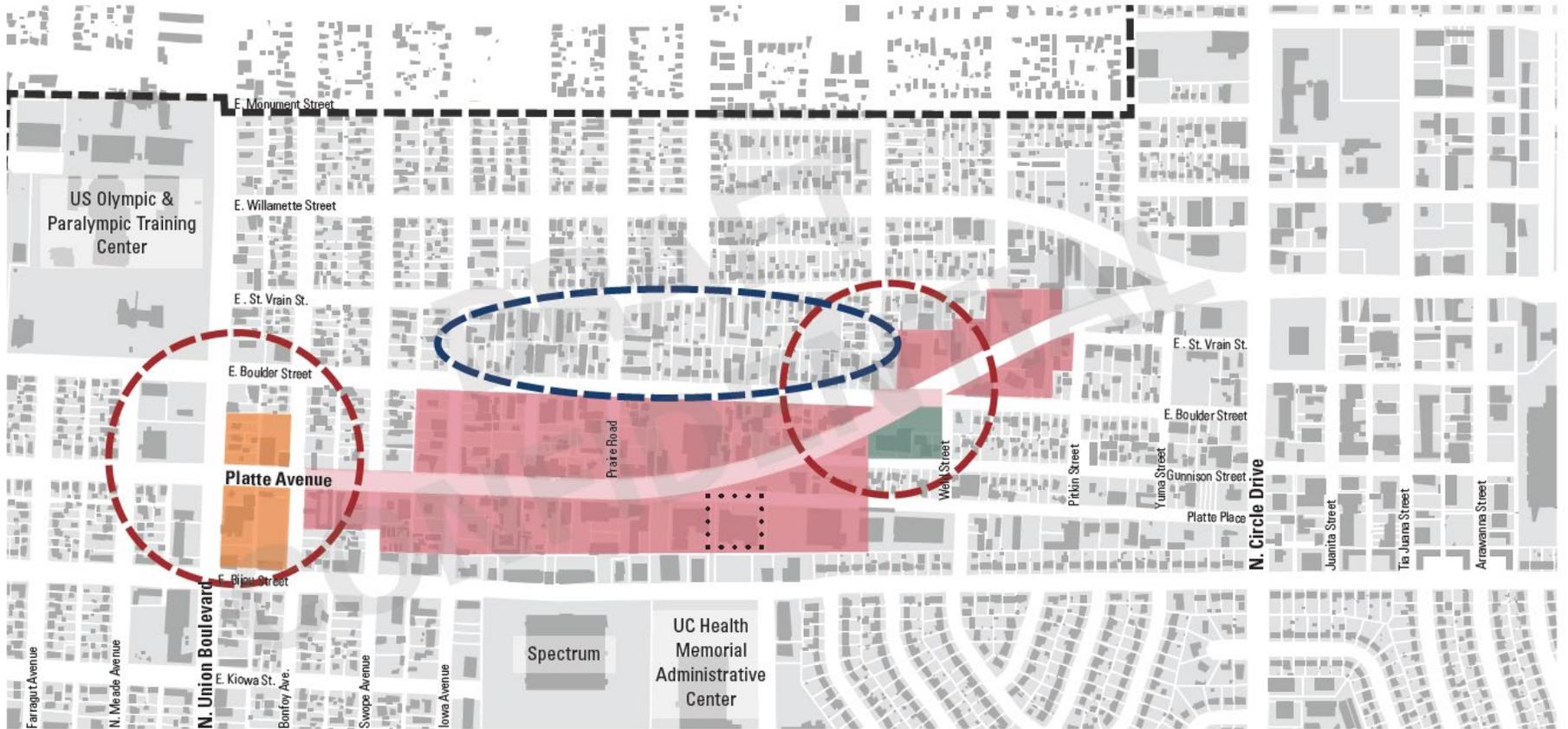
The Knob Hill area represents an opportunity to apply for rezoning as a Mixed-use Zone to increase commercial space availability in the area, increase residential density for multifamily and workforce/affordable housing, and include more mixed-use buildings within areas highlighted on **Figure 7**.

To calculate the potential long-term benefits that redevelopment of the Knob Hill area could bring, including increases to market rate and workforce/attainable housing, increases to available commercial space, and increases to tax revenues for the city and county, assumptions for redevelopment were modeled in a scenario for the Knob Hill corridor. Under this scenario, tax revenues would increase by 15 percent, commercial space would increase by 14 percent, and available housing units would increase by 41 percent. **Table 2** summarizes the benefit of redevelopment of the Knob Hill area.

**Table 2. Knob Hill Development Comparison Summary**

	Existing Conditions	Redeveloped Conditions
Total Housing Units	270	456
Total Commercial Square Footage	700,000	811,958
Cumulative City Tax Revenue (Years 1-8)	\$979,112	\$1,151,814
Cumulative County Tax Revenue (Years 1-8)	\$1,781,790	\$2,096,073
Total Tax Revenue (Years 1-8)	\$14,892,024	\$17,518,777

**Figure 7. Knob Hill Development Scenario**



**Legend**

- Mixed-use Workforce Housing | **4.99 total acres**
- Potential Walk-up Commercial / Mixed-use Redevelopment | **46.6 total acres**
- Road Diet and Streetscape Improvements
- Potential Park / Plaza | **1.66 total acres**
- Redevelopment Node
- Potential Affordable Housing Overlay Zone
- Art Exhibit Area

**Recommended Densities**

- Mixed-use Workforce Housing | **8 DU/Acre**
- Mixed-use Redevelopment | **8 DU/Acre**



## Eastern Reaches

The ambitions for the Eastern Reaches character area are reiterated on **Figure 8**:

**Figure 8. Eastern Reaches Ambitions**

Ambition Category	Ambition
<b>Vehicular</b> 	Address delays at intersections Provide capacity for forecasted future traffic
<b>Transit</b> 	Enhance Citadel Transfer Station Attract choice riders Plan for future transit
<b>Bicycle and Pedestrian</b> 	Complete missing sidewalks Enhance connections across Platte Avenue Provide for east/west pedestrian and bicycle travel Connect to existing and future trails
<b>Community</b> 	Plan for future function of Platte Avenue Reduce expressway feel
<b>Surrounding Land Uses</b> 	Plan for future land uses Investments in infrastructure to catalyze private investment Activate adjacent roadway network

These ambitions support an Eastern Reaches character area with adequate traffic capacity, attractive and efficient transit infrastructure, improved non-motorized connectivity, and a Platte Avenue right-of-way compatible future evolution as an urban arterial.

Potential solutions within the Eastern Reaches character area are identified as follows:

### Eastern Platte Avenue Widening

**Technical Inputs:** Traffic analyses found that the intersections at Murray and Wooten are currently operating at unacceptable LOS and that many signalized intersections along Platte Avenue between Academy Boulevard and Powers Boulevard are projected to operate at below the acceptable range in its current 4-lane configuration.

**Alignment with Ambitions:** Providing additional roadway capacity through widening Platte Avenue between Academy Boulevard and Powers Boulevard will address existing and future projected

traffic operations deficiencies and will address the character area ambitions of decreasing delays at intersections and providing capacity for future traffic.

### Circle/Platte Intersection Improvements

**Technical Inputs:** Traffic analyses found that multiple intersection approaches at the Platte/Circle intersection will operate at LOS F in the afternoon peak with the existing intersection configuration. An acceptable LOS can be achieved by implementing operational improvements in the form of widening the north, south, and east legs of the intersection, in addition to optimizing signal timing.

**Alignment with Ambitions:** These improvements are in line with character area ambitions of addressing delays at intersections and providing capacity for future traffic.

### Platte Avenue and Academy Quadrant Intersection

**Technical Inputs:** Traffic analyses of the Platte Avenue/Academy Boulevard Ramp traffic volumes and turning movements indicate that there is excess capacity at this intersection and there are opportunities to reconfigure the intersection into a Quadrant Road Intersection. This would be accomplished by replacing the interchange ramps with new roadway connections and signalized intersections to serve as connections between Platte Avenue and Academy Boulevard. A new street network would be pursued within the quadrants of the existing interchange as redevelopment of those areas occurs. An incremental right-in/right-out or three-quarter movement access at intersections along Platte Avenue may be an interim condition, while the ultimate geometry would be signalized intersections with a new Academy Boulevard bridge if and when Platte Avenue needs to be reconstructed as a six-lane roadway.

**Alignment with Ambitions:** Reconfiguring the Platte Avenue/Academy Boulevard interchange into a grade separated Quadrant Road Intersection would directly align with ambitions related to reducing the expressway feel and activating an adjacent roadway network. It would provide more urban-scale accessibility to adjacent land uses and create opportunities to spur development or redevelopment of land that was previously used for interchange ramps; specifically, it would create an ideal setting for a relocated transit transfer station at on the junction of two major routes in the City's transit network (in line with transit-related character area ambitions) and create opportunity to catalyze transit-oriented development or other redevelopment efforts.

Removing the interchange ramps would also enhance north-south pedestrian crossings and improve the possibility of east-west bicycle and pedestrian mobility along Platte Avenue, all of which are in line with character area ambitions for bicycle and pedestrian mobility, community character, and surrounding land uses.

### Removal/Relocation of Frontage Roads

**Technical Inputs:** Several frontage road segments along Platte Avenue contribute to poor operating conditions at traffic intersections near Platte Avenue. These include excessive intersection delay and safety challenges related to unsafe driving maneuvers and inadequate lane configurations due to the proximity of frontage road intersections with the intersections along

Platte Avenue. Removal of the adjacent Frontage Road intersections adjacent to Platte Avenue is a feasible option to address these operations and safety challenges.

**Alignment with Ambitions:** The frontage roads east of Murray Boulevard currently play an important role for property access and local circulation but do not support character area ambitions related to improving connections across Platte Avenue, reducing the expressway feel, and activating the adjacent roadway network, among others.

Re-envisioning the identity of eastern Platte Avenue toward an urban arterial, rather than an expressway, would likely include reconfiguring access to and from Platte Avenue to eliminate the frontage roads in their current form in favor of a more comprehensive adjacent roadway network. This would provide more frequent access points to/from Platte and give local traffic alternates to using Platte Avenue for shorter trips. This would also allow accommodation of a bicycle and pedestrian network that does not currently exist (aligning with the ambitions around completing missing sidewalks and providing east/west pedestrian and bicycle travel). This solution would also encourage the activation of the parcels adjacent to Platte Avenue for redevelopment opportunities, which is also in line with ambitions related to planning for future land uses and promoting investments to catalyze private investment in the corridor.

### Powers Boulevard Southbound Ramp Reconfiguration

**Technical Inputs:** The recent signalization of the Space Center Drive intersection results in only 900 feet of separation between the gore points of the intersections, which could result in operational challenges at the new intersection.

A solution option would be to reconstruct the existing large radius high speed southbound right turn free movement from the Powers Boulevard southbound off-ramp to be a standard tighter radius right turn lane at the Platte Avenue/Powers Boulevard Southbound Ramp signalized intersection to the east. This ramp reconfiguration would improve the weaving conditions by providing approximately 300 feet of increased distance and will reduce the offramp vehicle speed from off-ramp traffic. This will also provide a greater separation to the back of queue for the westbound approach to the future signalized Platte Avenue/Space Center Drive intersection to the west.

**Alignment with Ambitions:** This solution option would align with the ambition of reducing the expressway design of eastern Platte Avenue and adjusting the design toward more of an urban arterial functionality.

### Citadel Mall Redevelopment Opportunities

The U.S. Department of Treasury designates Citadel Mall as an Economic Opportunity Zone, providing opportunity for incentives to private investors taking an equity stake in community development. To calculate the potential long-term benefits that redevelopment of the Citadel Mall area could bring, including increases to market rate and workforce/attainable housing, increases to available commercial space, and increases to tax revenues for the city and county, a redevelopment scenario based on land use types was developed. In this modeling, it was assumed the Mall Area would seek rezoning as a Mixed-Use Zone to create a lifestyle town

center. The redevelopment scenarios anticipate contributing to a more walkable environment and transit hub to support enhanced mobility along the corridor.

**Table 3** summarizes the benefit of redevelopment of the Citadel Mall area under a range of two potential scenarios. Under the proposed incremental alternative, tax revenues would increase by 30.9 percent, commercial space would increase by 25.6 percent, and available housing units would increase by 51.6 percent. Under the proposed transformational alternative, tax revenues would increase by 36.9 percent, commercial space would increase by 36.8 percent and available housing units would increase by 79.4 percent.

**Table 3. Eastern Reaches Development Comparison Summary**

	Existing Conditions	Incremental Alternative	Transformational Alternative
Total Housing Units	122	252	592
Total Commercial Square Footage	1,400,000	1,882,228	2,215,679
Cumulative City Tax Revenue (Years 1-8)	\$707,158	\$1,022,714	\$1,121,014
Cumulative County Tax Revenue (Years 1-8)	\$1,340,883	\$1,939,227	\$2,125,619
Total Tax Revenue (Years 1-8)	\$10,809,679	\$15,633,290	\$17,135,914