

DENVER REGIONAL COUNCIL OF GOVERNMENTS

# east corridor

## Parking Report

DECEMBER 17<sup>TH</sup> 2014

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# East Corridor Parking Report

## Peoria Station Catalytic Project

### Purpose and Need

As part of the Peoria Station Catalytic Project, the team was tasked with developing strategies and tools that could facilitate surface to structure transitions of parking at the five stations along the East Corridor commuter rail line. This included reviewing at the anticipated travel patterns and growth in ridership along the corridor. In addition the team studied the potential for new development and existing conditions at each station.

The following section outlines the existing conditions that are found at each rail station and costs that are associated with constructing additional parking spaces. Next follows a parking toolbox that offers strategies to optimize existing parking supplies as well as steps that enhance the parking supply while waiting for the market to mature to support the conversion from surface to structure parking. Finally, recommendations are made for each station to encourage the conversion of surface parking to structured parking that include specific strategies from the toolbox and illustrative site plan concepts.

## Existing Conditions

The East Corridor Rail Line is an electric commuter rail line that will run 22.8 miles from Denver Union Station (DUS) to Denver International Airport (DIA) with five stations along the line (see Figure P.1). It is anticipated to begin service in 2016.

Traveling east from DUS, the first three stations on the line are located in the City and County of Denver. They are 38<sup>th</sup> and Blake, 40<sup>th</sup> and Colorado, and Central Park Boulevard. Peoria and 40<sup>th</sup> and Airport are the next two stations moving east and are located in the City of Aurora, though property within the City and County of Denver is located within a ½ mile radius of both stations.

Union Station is a major intermodal transportation hub with connections to light rail and regional and local bus lines and will be a major destination for westbound rail passengers. The majority of eastbound passengers are expected to alight at DIA, though some will make the connection to the Aurora Line at the Peoria Station. The East Corridor line is also expected to serve many transit-dependent neighborhoods along the line.

### EAST RAIL LINE OPENING DAY RIDERSHIP AND PARKING

The East Rail Line is expected to have a ridership of almost 17,000 passengers on opening day in 2016 (East Corridor Rail Line Record of Decision, 2009). Just over 3,500 parking spaces will be provided to accommodate transit passengers

at the five stations along the line. All opening day parking spaces are located in surface lots in close proximity to the station platform. Table P.1 and Figure P.2 outline the number of parking spaces that will be provided at each station.



**FIGURE P.1 - RTD FaSTRACKS EAST RAIL LINE** SOURCE: WWW.RTD-FASTRACKS.COM

### RTD ROD EAST RAIL LINE 2030 RIDERSHIP AND PARKING

The RTD East Corridor Rail Line Record of Decision (ROD) forecasts ridership on the East Line to increase to 38,000 passengers by 2030. Parking demand is also expected to grow by about 4,370 spaces to a total of 7,900 spaces provided in a combination of surface lots and parking structures. Table P.1 and Figure P.3 highlight the number of parking spaces expected to be needed at each station in 2030.

### STATION AREA PLANS AND CHARACTERISTICS

While there are opportunities for new development, there are also significant challenges to implementing transit-oriented development adjacent to the new platforms at the East Corridor stations. Many station areas lack infrastructure and are surrounded by primarily industrial land uses. This section summarizes the existing conditions found at each station and the unique characteristics that may provide

the future backbone to catalyze the denser mixed-use development envisioned (Table P.2).

TABLE P.1: EAST CORRIDOR PARKING SPACES BY STATION			
STATION	OPENING DAY PARKING SPACES	PARKING SPACES 2030	2030 ADDITIONAL SPACES
38 <sup>TH</sup> & BLAKE	200	500	300
40 <sup>TH</sup> & COLORADO	200	1,800	1,600
CENTRAL PARK	1,500	1,500	0
PEORIA	550	1,900	1,350
40 <sup>TH</sup> & AIRPORT	1,079	2,200	1,121
<b>TOTAL</b>	<b>3,529</b>	<b>7900</b>	<b>4,371</b>

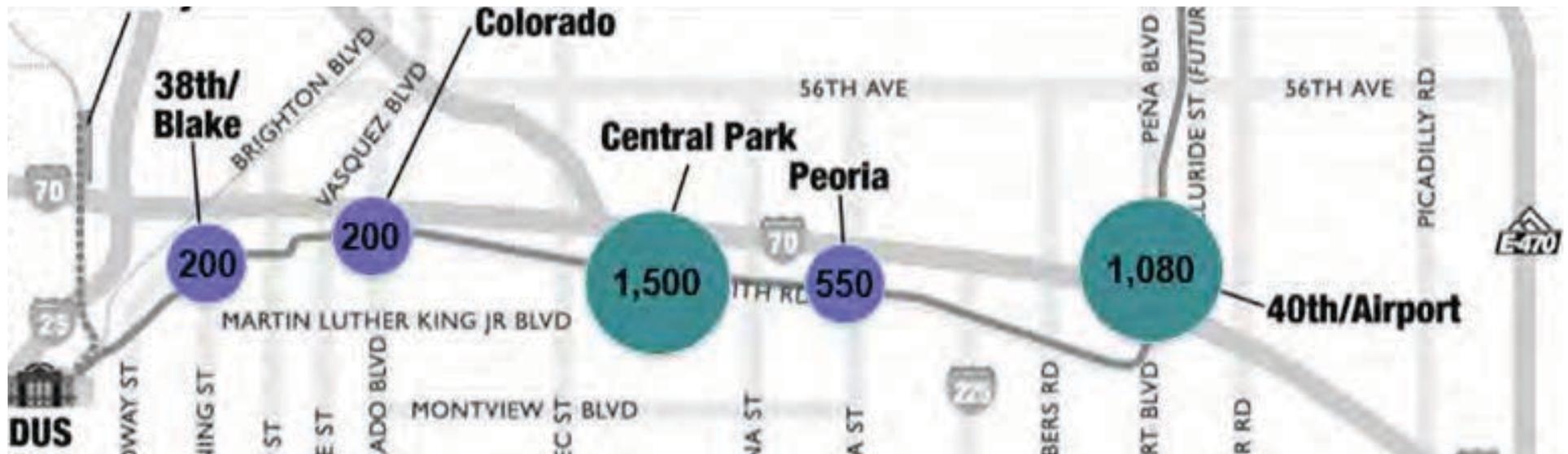
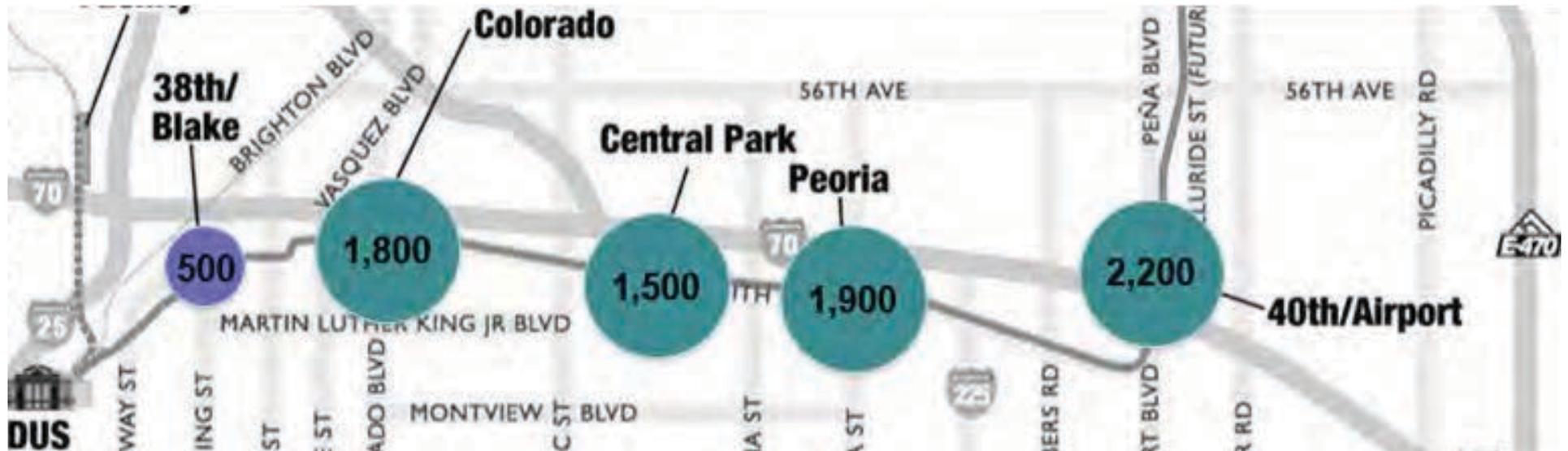


FIGURE P.2 - EAST RAIL LINE OPENING DAY 2016 PARKING SPACES BY STATION (3,530 SPACES)

TABLE P.2: EAST CORRIDOR STATION CHARACTERISTICS					
STATION	38 <sup>TH</sup> & BLAKE	40 <sup>TH</sup> & COLORADO	CENTRAL PARK	PEORIA	40 <sup>TH</sup> & AIRPORT
DENVER TOD TYPOLOGY	URBAN NEIGHBORHOOD	URBAN INNOVATION	URBAN CENTER	SUBURBAN INNOVATION	AREA OF CHANGE / MIXED USE
DRCOG URBAN CENTER	YES	YES	YES	NO	YES
APPOX. RTD LAND UNIMPROVED	~6 ACRES	--	--	--	--
APPROX. FOOTPRINT OF OPENING DAY SURFACE PARKING	1.6 ACRES	1.6 ACRES	12 ACRES	4.4 ACRES	8.7 ACRES
ADDITIONAL LAND REQUIRED FOR 2030 ROD PARKING	--	YES	--	--	--
LAND VALUE 2014 \$ (PER SF)	\$32	\$8	\$9	\$14	\$3
TOD POTENTIAL (1/4 MILE)	STRONG	MODERATE	STRONG	MINIMAL	MODERATE
DISTRICT	--	--	TIF & METRO	--	METRO



**FIGURE P.3 - EAST RAIL LINE ROD 2030 PARKING SPACES BY STATION (7,900 SPACES)**

## 38<sup>TH</sup> & BLAKE STATION

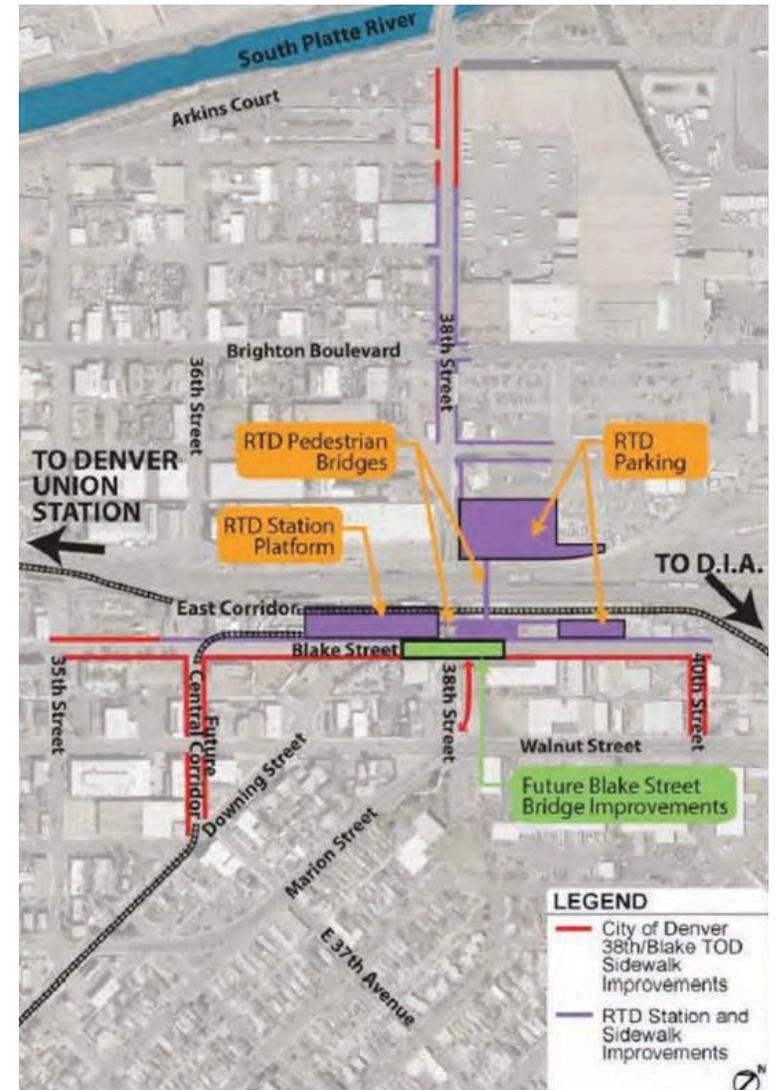
The 38<sup>th</sup> and Blake station is identified as an urban neighborhood in the future with a strong potential for transit-oriented development in Denver's TOD Strategic Plan. The area surrounding the station is significantly lacking infrastructure such as sidewalks. The City and County of Denver has identified infrastructure improvements in the station area to increase the pedestrian and bicycle access to the station. In addition to the pedestrian bridge planned over 38<sup>th</sup> Street, the City and County of Denver will construct and improve sidewalks on Blake St., 36<sup>th</sup> St., 38<sup>th</sup> St., and 40<sup>th</sup> St. Sidewalk improvements planned by the City and RTD in the station area are illustrated in Figure P.4.

The new mobility from the rail line will benefit many households in the station area. More than half of the households in the neighborhood are well below the median income in the area (Denver

Regional Equity Atlas). Households in the station area also have some of the lowest rates of vehicle availability in Colorado. Further details about the demographics of the neighborhoods can be found in the 38<sup>th</sup> & Blake Station Area Plan (2009) (see Figure P.5).<sup>1</sup>

RTD is providing 200 surface parking spaces at the station. The ROD estimates another 300 parking spaces will be required by 2030 for a total of 500 parking spaces in 2030. There is sufficient undeveloped land owned by RTD at the station to accommodate 300 additional spaces.

<sup>1</sup> Station site plans source: [http://www.rtd-fastrack.com/ec\\_54](http://www.rtd-fastrack.com/ec_54). The site plans are for information only and are subject to change.



**FIGURE P.4 - SIDEWALK IMPROVEMENTS PLANNED IN THE STATION AREA** SOURCE: WWW.DENVERGOV.ORG

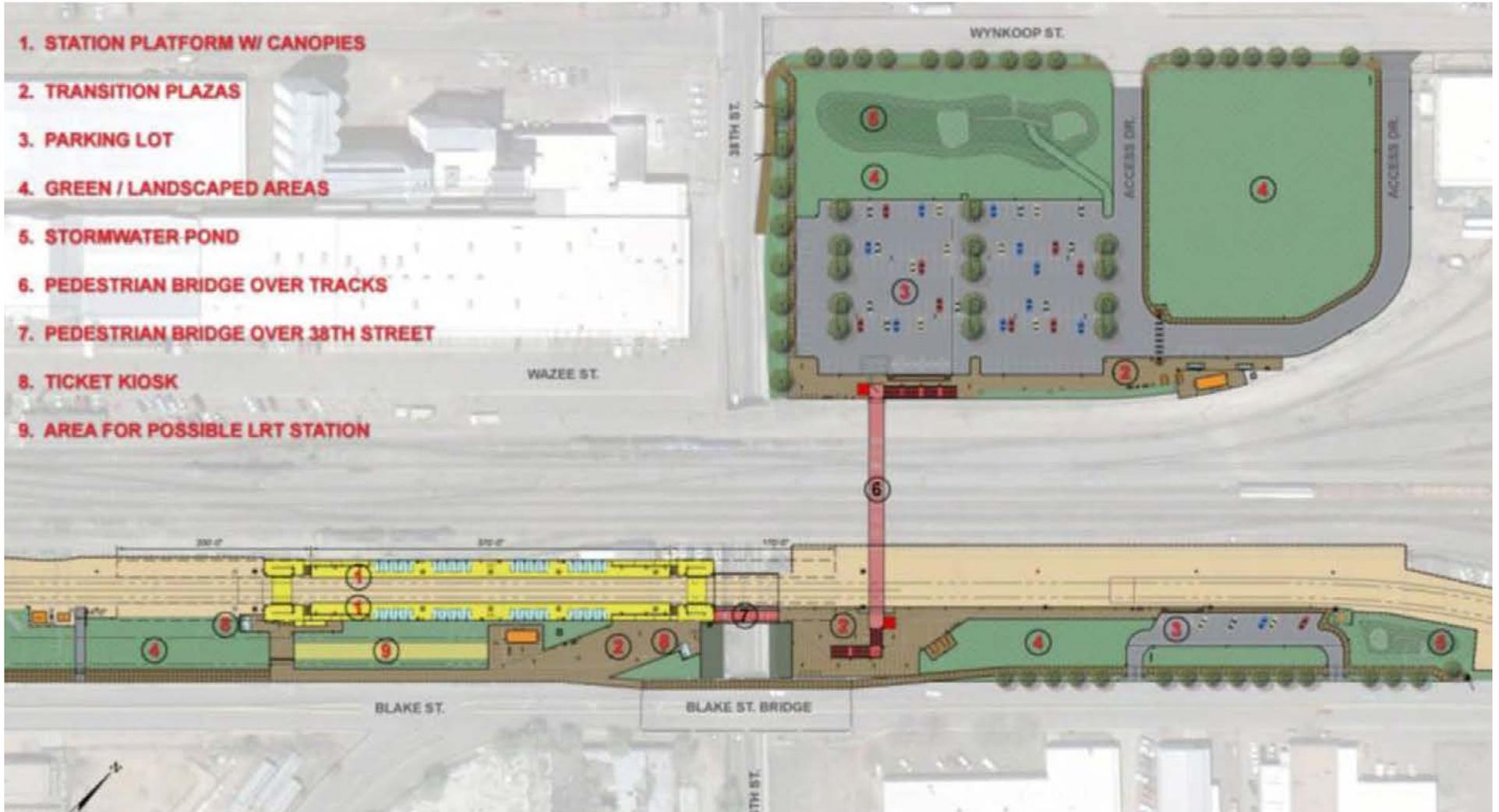


FIGURE P.5 - 38<sup>TH</sup> & BLAKE STATION ILLUSTRATIVE STATION PLAN SOURCE: WWW.RTD-FASTRACKS.COM

## 40<sup>TH</sup> AND COLORADO STATION

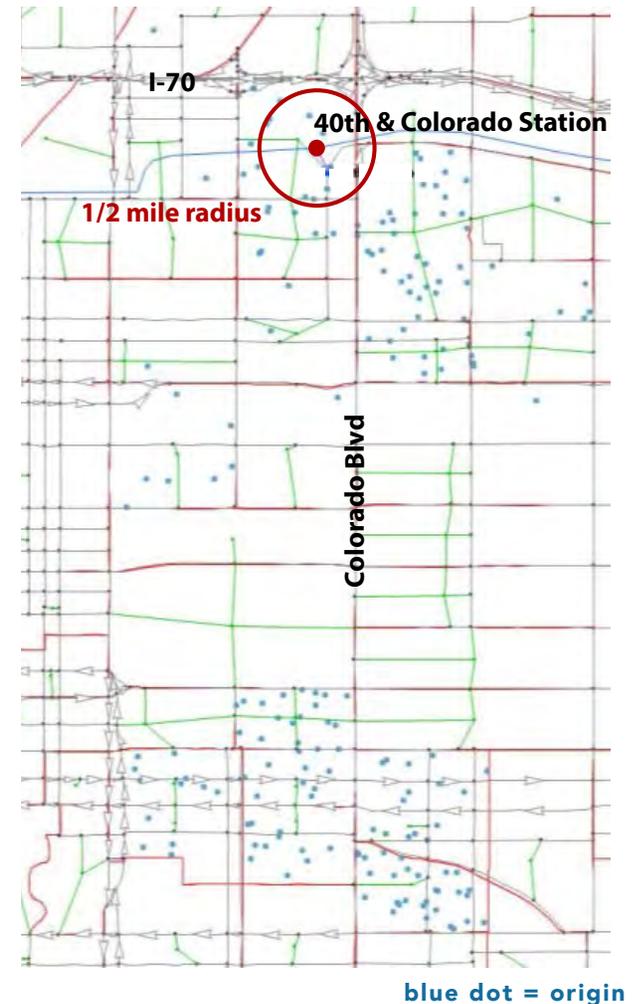
Denver's TOD Strategic Plan identified the 40<sup>th</sup> and Colorado station as a Commuter Town Center. The Elyria-Swansea neighborhood makes up a large part of the station influence area. It is located north of 40<sup>th</sup> Avenue and west of Colorado Boulevard. The City and County of Denver has been working for over a year and a half with the neighborhood to develop a neighborhood plan that addresses many issues, including I-70 reconstruction and the station area. Illustrative plans for a mix of light industrial and residential redevelopment in the station have been proposed as a part of the neighborhood planning process.

There are many transit-dependent residents, including children and residents over the age of 55, living within the station influence area. Over half of the households in the station area are well below the median income in the Denver Region (based on the Denver Regional Equity Atlas).. Pedestrian and bicycle connectivity to the station is a major

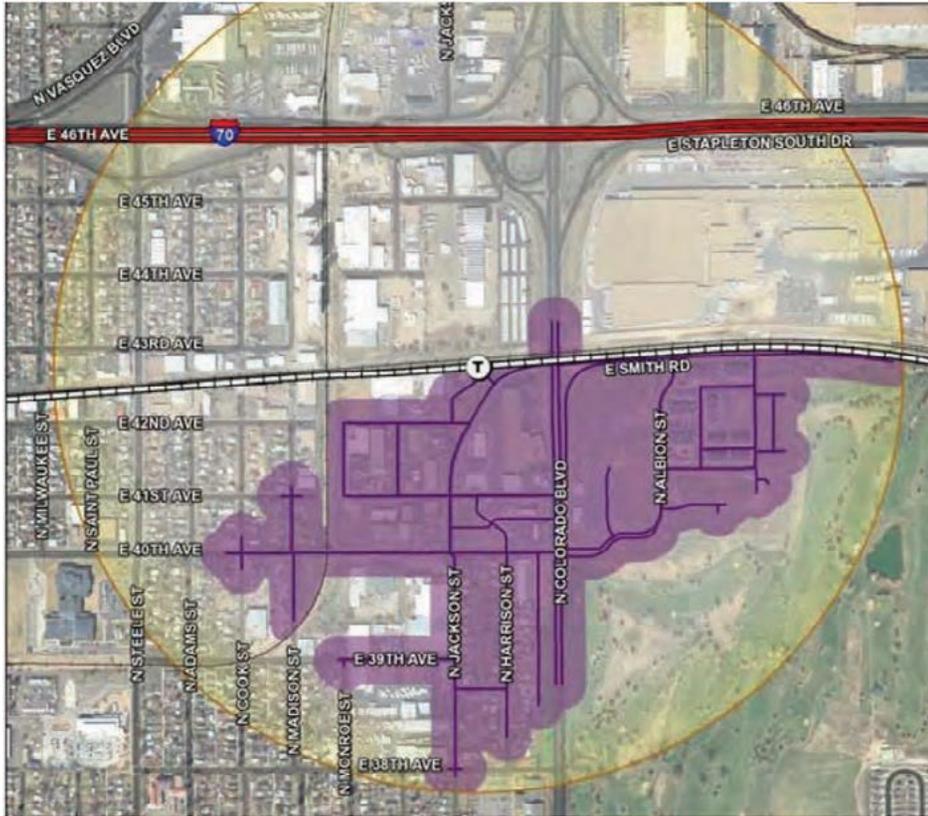
issue in this neighborhood. A lack of sidewalks on 40<sup>th</sup> Avenue in addition the Market Lead, a 120-foot wide and 25-foot deep ditch containing an abandoned BNSF rail spur, impedes access to the station from neighborhoods to the east. The commuter and freight rail tracks themselves impede access to the station from neighborhoods to the north. Figure P.7 illustrates how the walkshed for these neighborhoods could be improved by a series of sidewalk improvements, pedestrian bridges, and roadway connections.

Figure P.6 illustrates the origins of riders that will access the station by automobile in 2035 as forecast by RTD modeling. A number of passengers boarding at the station will drive from neighborhoods south of the station.

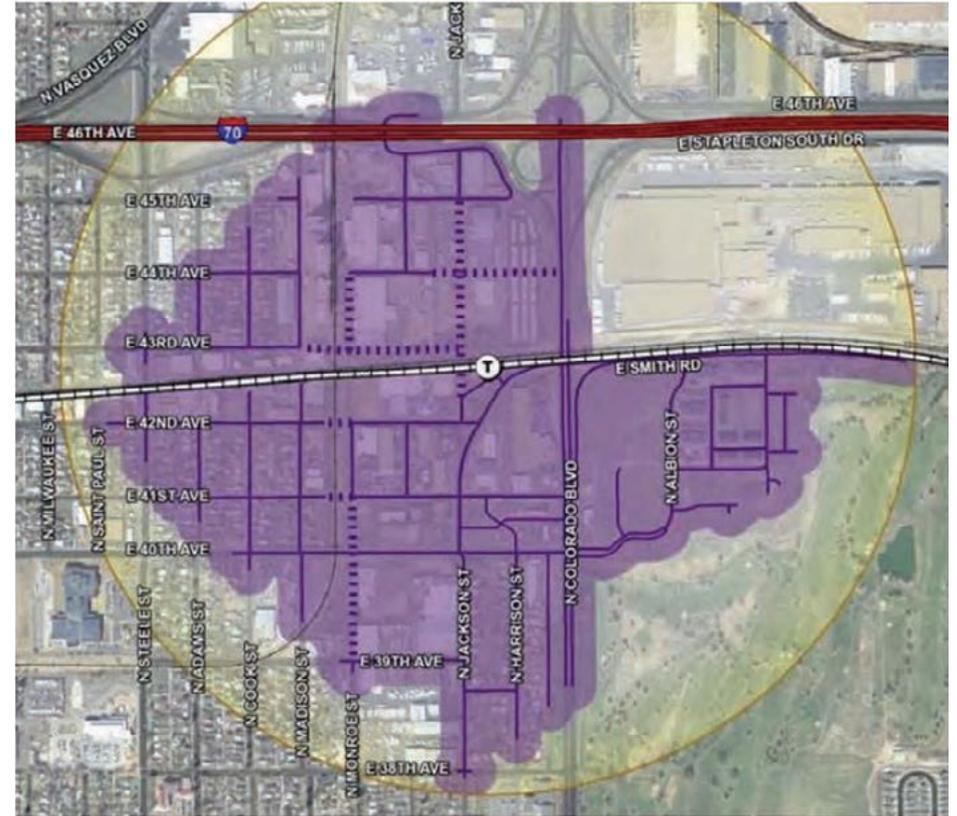
RTD will provide 200 surface spaces on opening day at the station. The ROD projects demand for an additional 1,600 parking spaces at the station by 2030 for a total of 1,800 parking spaces. The existing RTD land at the station is not sufficient to meet the 2030 projection of 1,800 parking spaces at the station (see Figure P.8).



**FIGURE P.6 - ORIGINS OF RIDERS ACCESSING 40<sup>TH</sup> & COLORADO BY AUTOMOBILE 2035 FORECAST** SOURCE: RTD



before improvements



after improvements

FIGURE P.7 - WALKSHED OF STATION AREA BEFORE AND AFTER IMPROVEMENTS SOURCE: WWW.DENVERGOV.ORG



- 1. STATION PLATFORM W/ CANOPIES**
- 2. TRANSITION PLAZAS**
- 3. BUS TRANSFER AREA**
- 4. PARKING LOT**
- 5. GREEN / LANDSCAPED AREAS**
- 6. STORMWATER POND**
- 7. TICKET KIOSK**
- 8. SITE OF FUTURE PARKING STRUCTURE FOR 2030 EXPANSION**

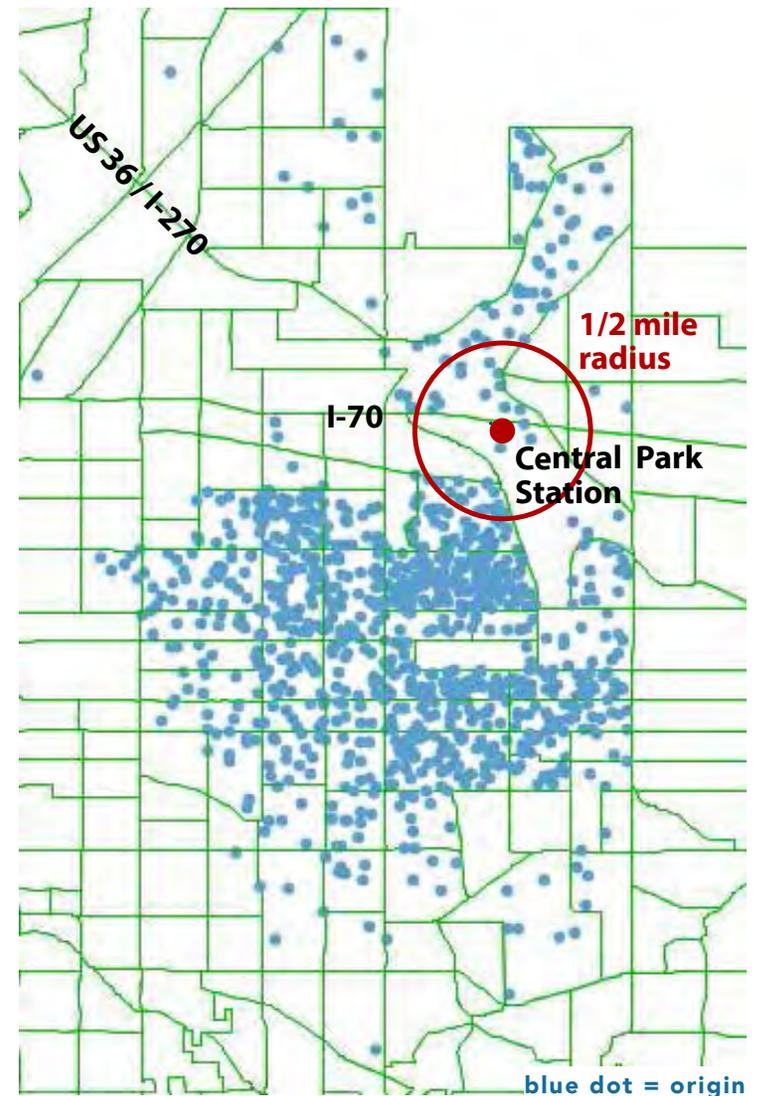
**FIGURE P.8 - 40<sup>TH</sup> & COLORADO STATION ILLUSTRATIVE STATION PLAN** SOURCE: WWW.RTD-FASTRACKS.COM

### CENTRAL PARK STATION

Central Park Station is located in the Stapleton Neighborhood and is within the Stapleton Development Plan area. The Plan lays out a walkable, transit-oriented neighborhood design already constructed in some areas of the neighborhood. The station is also governed by the Central Park Station Area Plan, which supports transit-oriented development and recommends phasing new development constructed on the RTD surface spaces over time as the area develops.

The station will serve as a bus transfer facility in addition to a Park-n-Ride. RTD will provide 1,500 surface spaces on opening day at the station. The ROD projects no additional demand for parking spaces by 2030, though the location of the parking spaces and whether they continue to be surface spaces or migrate into parking structures over time is flexible (see Figure P.10).

Figure P.9 illustrates the origins of riders that will access the station by automobile in 2035 as forecast by RTD modeling. The origins of the majority of riders arriving at the station by automobile are within a one to two miles of the station.



**FIGURE P.9 - ORIGINS OF RIDERS ACCESSING CENTRAL PARK BY AUTOMOBILE 2035 FORECAST** SOURCE: RTD



FIGURE P.10 - CENTRAL PARK STATION ILLUSTRATIVE STATION PLAN SOURCE: WWW.RTD-FASTRACKS.COM

## PEORIA STATION

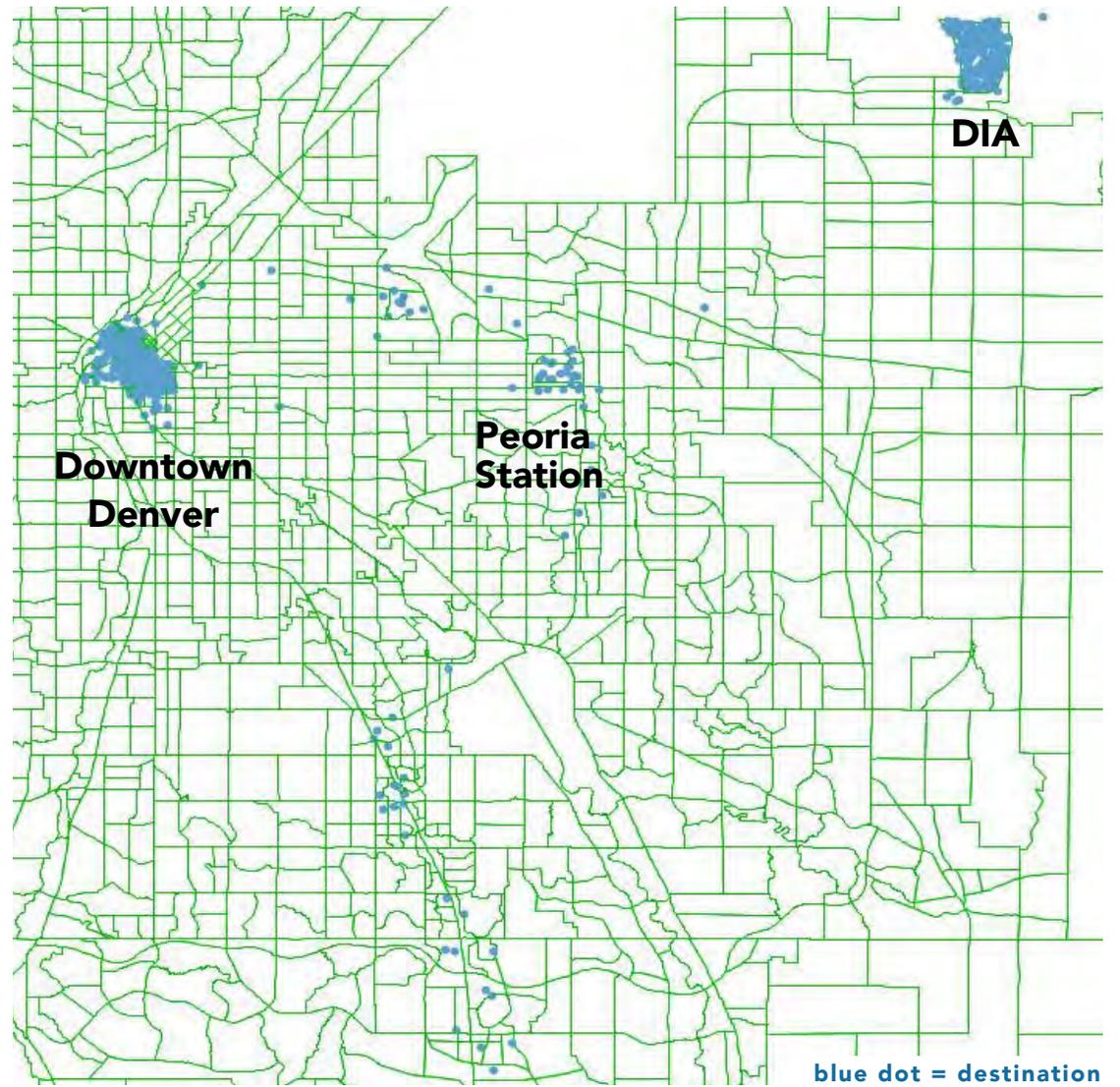
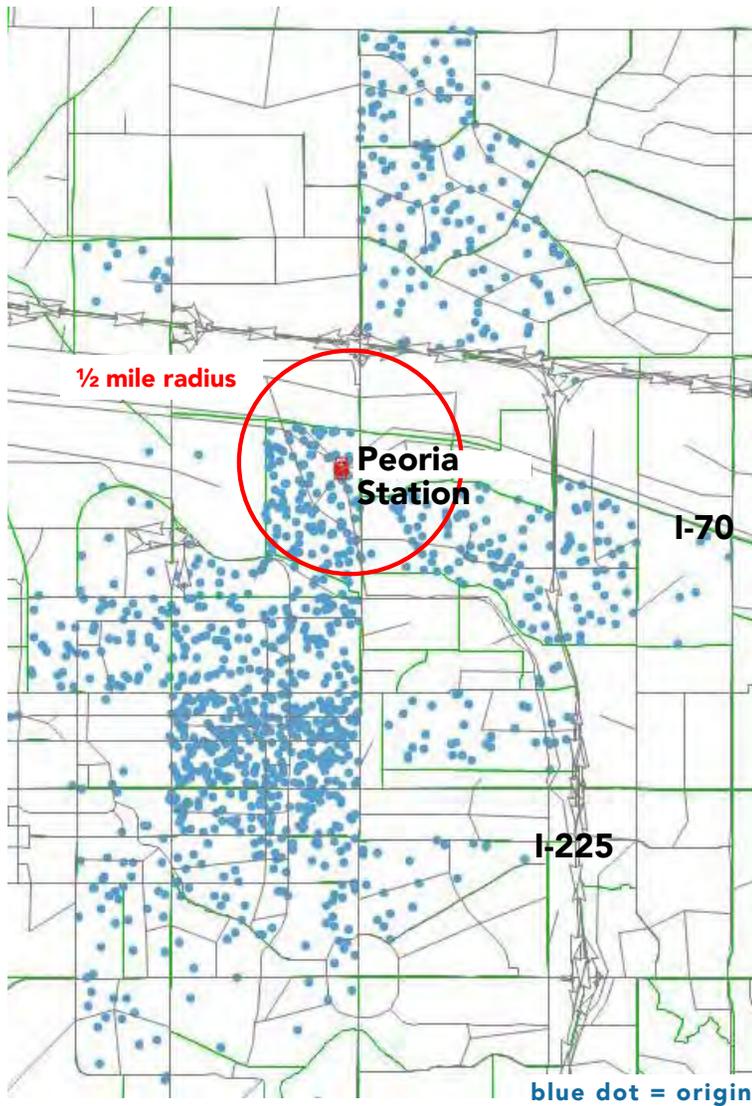
Denver's TOD Strategic Plan identified the Peoria Station as Suburban with an Innovation Overlay. Peoria station will act as a transfer station between the I-225/Aurora Line and the East Rail Line. RTD will provide 550 surface parking spaces on opening day at the station. The ROD estimates an additional demand for 1,350 parking spaces by 2030 for a total of 1,900 spaces serving the station (see Figure P.12).

The land uses adjacent to the station are primarily industrial. The Morris Heights neighborhood is the closest neighborhood – located about ½ mile from the station. The City of Aurora has approved TIP funding to improve bicycle and pedestrian connections between the neighborhood and the station, including a 12-foot wide multi-use path along the east side of Peoria Street between 30<sup>th</sup> and 33<sup>rd</sup> Streets.

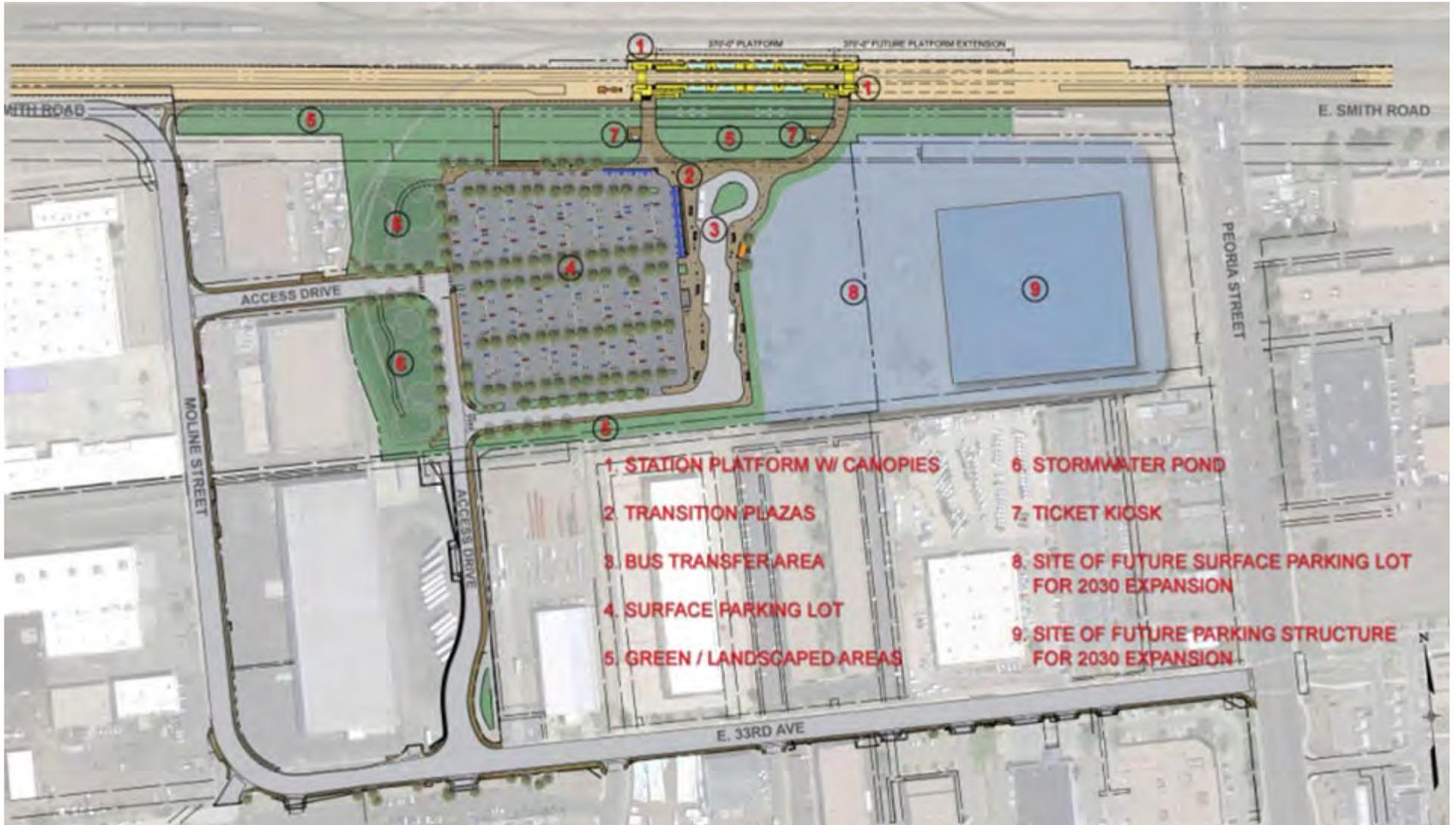
The Montbello neighborhood is north of the station in the City and County of Denver. Bicycle and pedestrian access from the Montbello neighborhood is currently hindered by a lack of sidewalks along Peoria Street from 44<sup>th</sup> to 39<sup>th</sup> Street. Peoria Street is being reconstructed

on its east side, south of 39<sup>th</sup>, as part of the Peoria Crossing project. The Aurora Housing Authority is in the planning process to develop a property into approximately 180 units at the edge of the Morris Heights neighborhood on the northeast corner of 30<sup>th</sup> and Peoria Street.

Figure P.11 illustrates the origins of riders accessing the station by automobile in 2035 as forecast by RTD modeling. Similar to the origins forecast for riders boarding at Central Park Station, the majority of riders arriving at Peoria Station by automobile are expected to live within one to two miles of the station. The forecast destinations of passengers boarding the East Line in 2035 at Peoria Station (see figure P.11). The results of this analysis show that a little less than half of the passengers board and travel to DIA, about the same number travel to Denver Union Station, and a small number board the Aurora Line and travel to south to destinations.



**FIGURE P.11 - ORIGINS THEN DESTINATIONS OF RIDERS ACCESSING PEORIA 2035 FORECAST** SOURCE: RTD



**FIGURE P.12 - PEORIA STATION ILLUSTRATIVE STATION PLAN** SOURCE: WWW.RTD-FASTRACKS.COM

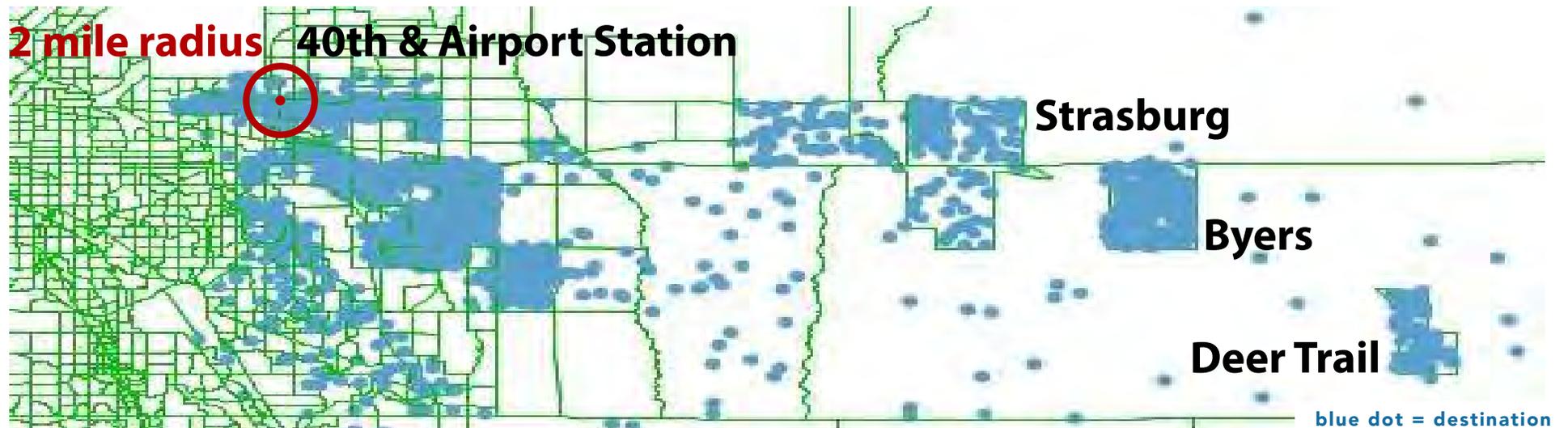
## 40<sup>TH</sup> & AIRPORT STATION

Denver's TOD Strategic Plan identifies the 40<sup>th</sup> and Airport station as Suburban with a focus on mixed use. The station will have 1,079 parking spaces on opening day and will include a bus transfer facility in addition to the park-n-ride. It is the last stop on the eastbound train before the airport. The station is expected to capture passengers headed to DIA from a broader travelshed than the other stations, including communities to the east like Byers and

Strasburg. The ROD estimates a demand for about 1,120 additional parking spaces by 2030, for a total of 2,200 spaces at the station (see Figure P.14).

The station area is surrounded by greenfield that is owned primarily by Pauls Corporation east of the rail line and DIA west of the line. Both property owners have discussed future plans to construct additional parking spaces and TOD around the station area.

Passengers arriving at the station in 2035 by automobile are forecast to travel a greater distance than those boarding the East Line at Peoria or Central Park stations. Figure P.13 shows that the origins of passengers boarding at 40<sup>th</sup> and Airport are distributed to the south of the station and as far east as Byers and Deer Trail.



**FIGURE P.13 - ORIGINS OF RIDERS ACCESSING 40<sup>TH</sup> & AIRPORT BY AUTOMOBILE 2035 FORECAST** SOURCE: RTD



## BASELINE SURFACE AND STRUCTURE PARKING COSTS

In order to better understand the future expenses associated with additional parking constructed as part of the FasTracks program along the East Line, baseline surface and structure capital and operating and maintenance (O&M) expenses were compiled. These expenses reflect current RTD construction costs and those found in the region. The cost of constructing a surface parking space was assumed to be \$6,000 per space and includes expenses such as landscaping, lighting, and drainage improvements. The cost of a structured parking space in a garage with no wrap is estimated to be \$16,000 per space and the cost in a garage with a wrap is estimated to be \$20,000 per space. These estimates do not include the cost of land (see Table P.3).

FIGURE P.14 - 40<sup>TH</sup> & AIRPORT STATION ILLUSTRATIVE STATION PLAN SOURCE: WWW.RTD-FASTRACKS.COM

**FEE FOR RTD PARKING SPACES**

Under current legislation, out-of-district patrons are charged \$4 daily, while the first 24 hours are free for in-district patrons and a \$2 daily fee is charged thereafter. New Colorado state legislation, SB13-027, allows third parties to charge for RTD commuter parking.

**RTD STATION ACCESS GUIDELINES**

The RTD Strategic Plan for TOD (2010) outlines RTD’s vision for TOD around stations and strategies that can be used to encourage this development. One of RTD’s goals outlined in the plan is to support multimodal access to the transit system by all users. A main strategy to achieve this goal is RTD’s hierarchy of access to rapid transit which considers the following modes in order of priority: pedestrians, bus riders, bicyclists, vehicles (short-term parking), and vehicles (long-term parking).

The maximum distance that parking stalls can be located from the station platform are established in the RTD Transit Access Guidelines (2009). The standards state “at least half of station park-n-Ride capacity shall be located less than 1,000 feet walk distance from the platform center, at least 75% shall be located less than 1,500 feet walk distance from the platform center, and the remainder can be located up to 2,500 feet away,” (see Table P.4).

The Guidelines note “in TOD station areas with a need for large parking capacity, it is preferable to have multiple park-n-Ride sites rather [than] a single facility with greater potential impacts to the pedestrian environment.” The RTD TOD Design Criteria (2012) states that the maximum number of distributed parking lots should not exceed **four**.

**TABLE P.3: BASELINE CAPITAL AND O&M COSTS FOR SURFACE AND STRUCTURE PARKING SPACES**

SOURCE	SURFACE PARKING SPACE		STRUCTURE PARKING SPACE	
	CAPITOL	O&M	CAPITOL	O&M
RTD CENTRAL PARK STATION	\$6,000	--	N/A	N/A
ARVADA PARKING STUDY, 2010	\$6,160	\$200	\$16,500	\$430
CITY OF GOLDEN	--	--	\$16,800	\$240
WESTMINSTER, 2014	--	--	\$16,000	--
VTPI, 2002 (ADJUSTED TO 2014 DOLLARS)	\$4,000	\$400	\$18,000	\$400
<b>COST ASSUMED IN CALCULATIONS IN THIS REPORT</b>	<b>\$6,000</b>	--	<b>\$16,000 (NO WRAP)</b> <b>\$20,000 (WRAP)</b>	--

NOTES: COSTS DO NOT INCLUDE COST OF LAND; COSTS ARE IN 2014 \$

**TABLE P.4: PARK-N-RIDE SITING STANDARDS**

SHARE OF CAPACITY	MAXIMUM WALK PATH DISTANCE	MAXIMUM ARC DISTANCE
50%	1,000 FT.	600 FT.
75%	1,500 FT.	900 FT.
100%	2,500 FT.	1,500 FT.
MAXIMUM NUMBER OF DISTRIBUTED PARKING LOTS = 4		
SOURCE: RTD TRANSIT GUIDELINES, 2009 & TOD DESIGN CRITERIA, 2012		

## RTD Structure Case Studies

This section provides descriptions of financing programs for a number of existing and planned RTD parking structures and identifies important challenges and strategies to inform future efforts throughout the East Corridor and the rest of the FasTracks system to convert surface lots to structured parking. The parking structures evaluated include the following:

### Existing

- Broomfield (Arista) Station
- Lincoln Station

### Planned or Under Construction

- Boulder Junction
- Iliff Station
- Olde Town Arvada Station

The financing arrangements for each garage are described below and summarized in Table P.5 (on page 21).

### BROOMFIELD (ARISTA) STATION

The 1,500 space garage at Broomfield Station at Arista was built with the cooperation and financial commitments of RTD, Arista Metropolitan District, and the City of Broomfield. Built in 2007, the structure cost \$20.2 million and serves both RTD bus commuter patrons and visitors to the Arista commercial district, including the 6,500 seat 1st Bank Center.

Arista Metro District sold 2.6 acres to RTD which used the land to construct its bus bays and turnaround facilities. RTD then sold 46 acres to Arista Metro District for \$1.7 million. This land was used for subsequent Arista commercial and residential development as well as for the site of the parking garage west of the RTD bus facility. Proceeds of the sale helped cover the RTD portion of garage construction costs.

The Broomfield Station parking garage was built and is owned and operated by the Arista Metro District which contributed \$11 million to the total \$20.2 million cost. RTD contributed the remaining \$9.2 million. The Metro District has the exclusive right to 560 parking spaces, RTD has the right to use 200 spaces (through an easement

agreement), and 740 spaces are for shared use. RTD patrons have access to those 740 spaces except during 1stBank Center events. This shared parking arrangement allows more flexible use of the garage, however it also poses the operational challenge of clearly identifying RTD commuters who do not have to pay, in contrast to event center or retail village visitors who do have to pay.

In addition to the \$1.7 million land sale proceeds, RTD also contributed the \$5 million from its sales tax agreement with the City of Broomfield in which RTD receives 45 percent of the 3.5 percent sales tax levy in the Arista retail village. The \$5 million is to be paid by the City to RTD in annual installments not exceeding \$500,000; those installments are assigned to the Metro District to help pay RTD's portion of the construction costs. The Metro District financed its portion of garage costs using bonds funded by a 0.2 percent sales tax imposed in the Local Improvement District.

## LINCOLN STATION

Lincoln Station is currently the southern terminus of the Southeast Rail Line (until FasTracks completes the three station extension to Sky Ridge, Lone Tree, and RidgeGate in 2019). In 2006, RTD completed construction of the Lincoln station garage with 2,134 total spaces. RTD owns and operates the garage (including 1,734 spaces for commuter patrons), but sold 400 spaces (the bottom floor of the structure) to Westfield development. Westfield purchased the spaces to help serve its \$70 million, 207,000 square foot first phase development at Lincoln Station which included three buildings of office and retail around an outdoor public plaza.

RTD purchased the land for the garage from Westfield and the two groups subsequently coordinated on joint planning and zoning decisions to align the garage design with both RTD and developer needs. In addition, Westfield paid for the realignment of the RTD bus facility.

## BOULDER JUNCTION

The Boulder Junction parking garage is under construction as part of the mixed use Depot Square development which includes a 150 room Hyatt Hotel, an underground RTD regional bus facility, residential apartments, a public plaza, and the above-ground garage. With 392 total spaces, the garage is small compared to other RTD facilities around the region and, in fact, only 75 spaces are reserved for RTD commuters. The remaining 317 spaces are all shared:

- 136 spaces for hotel guests;
- 10 spaces for visitors to the Depot building;
- 71 spaces for residential units; and
- 100 spaces for the General Improvement District (GID).

The arrangement to combine the RTD commuter spaces in the same garage as the other shared spaces creates the same challenge described for the Broomfield station garage – distinguishing non-paying RTD patrons from other users.



The parking garage at Broomfield (Arista) Station has 1,500 spaces for shared use.



RTD owns and operates the Lincoln Station garage, which contains 2,134 parking spaces.



The Boulder Junction parking garage is under construction as part of a mixed use development with 392 parking spaces.



The Olde Town Arvada Station garage will be built with approximately 600 parking spaces on three levels.

The structure was funded entirely through development mechanisms and required no subsidy from the City of Boulder. The hotel, residential and GID users bought spaces in the garage (which is operated as a condominium). RTD’s land contribution to the Depot Square developer allowed it to retain condominium interest in its 75 spaces, the underground “bus box”, and to common areas and plazas. Finally, \$800,000 in proceeds from RTD’s land sale to the Hotel developer was rolled back into the project to enhance the bus facility and to provide it with full station amenities.

### ILIFF STATION

The Iliff Station garage is planned as a \$10.5 million, 600 space City of Aurora-owned facility when the I-225/Aurora Line opens in 2016. RTD originally had \$2.7 million budgeted to build 600 surface parking spaces on two lots near the Iliff Station. The City of Aurora negotiated with RTD and provided an additional \$7.8 million to fund a two level garage on the original lot closest to the station, thus preserving the second site as a potential development location. Plans also allow for the possibility that two additional levels (600 more spaces) can be built on top of the

original two levels if demand necessitates it. At this stage, it is unclear if Aurora intends to charge for parking at this garage.

### OLDE TOWN ARVADA STATION

The Olde Town Arvada Station garage will be built with approximately 600 parking spaces on three levels when the Gold Line commuter rail opens in 2016. 400 spaces will accommodate RTD commuters and approximately 200 spaces are public spaces for visitors to Olde Town. The \$26 million project will be funded by an array of sources including:

- \$2.6 million allocation for parking construction in RTD’s Eagle P3 contract;
- \$2 million DRCOG “1st \$60 million” discretionary funds;
- \$1.5 million FASTER grant to fund the bus facility; and
- \$20 million provided by the City of Arvada.

The land assemblage and site selection for the garage were a combined effort by the City of Arvada, the Arvada Urban Renewal Authority, and RTD. Locating the garage west of Vance Street between the Landmark Theater and Olde Town preserves 8.79

acres of RTD and City-owned land for TOD. Meetings are scheduled to discuss parking management issues, but the City of Arvada is unlikely to charge for parking as that could be a deterrent to potential Olde Town visitors.

**LESSONS LEARNED**

Several lessons can be learned from the existing and planned parking structures described above (see Table P.5). First, RTD does not have extra money budgeted to convert surface lots to structured facilities. However, the Agency is supportive of TOD and is willing to work creatively to find parking solutions that improve density and development potential around their stations.

Second, in the current Denver market, transit-oriented development can rarely cover the cost of structuring RTD parking. Substantial City contributions are required to convert surface to structured parking when it is deemed desirable to preserve land for development opportunities. In the examples above, the City of Broomfield contributed \$5 million in a sales tax agreement with RTD and the Metro District, The City of Aurora contributed

\$7.8 million to ensure a site near the Iliff Station remained free for development, and the City of Arvada provided \$20 million to support goals for higher intensity development at the Olde Town station. A city subsidy was unneeded in the case of the Boulder Junction garage primarily because a high level of market pressure and land limitations will create enough parking demand to allow the parking district to charge for parking in 80 percent of spaces in the garage. Innovative shared and unbundled parking strategies also support the feasibility of managing the garage profitably.

New Colorado legislation passed in 2013 (SB 13-027) allows third parties to charge for RTD commuter parking. The ability to generate a consistent revenue stream by charging for parking where demand merits it will expand financing opportunities for structuring parking. However, as mentioned in several of the case studies, it also creates parking management challenges. Identification and validation of RTD commuters is problematic in shared garages, but necessary in an environment in which different types of users are allowed to park for varying time increments and are charged different rates.

**TABLE P.5: PARKING GARAGE FINANCING CASE STUDIES SUMMARY**

STATION / LINE	# SPACES	COST (MILLIONS)	FINANCING CONSIDERATIONS			SHARED PARKING
			IMPROVEMENT DISTRICT	CITY CONTRIBUTION	PRIVATE DEVELOPER	
BROOMFIELD (ARISTA) U.S. 36 BRT	1,500	\$20.2	X	X	X	X
BOULDER JUNCTION* U.S. 36 BRT	392	--	X		X	X
ILIFF I-225/AURORA	600	\$10.5		X		
LINCOLN* SOUTHEAST	2,134	--			X	X
OLDE TOWN ARVADA GOLD	600	\$26		X		X

SOURCE: RTD; ECONOMIC & PLANNING SYSTEMS  
 \*NOTE: SPECIFIC PARKING GARAGE COSTS WERE UNAVAILABLE FOR BOULDER JUNCTION AND LINCOLN STATION GARAGES.

## Parking Toolbox

This section describes parking tools that can be used to support the transition of surface parking to structure parking at stations in the East Corridor. The tools are organized into categories, beginning with strategies to meet early changes in demand by improving the utilization and efficiency of the existing parking supply. Later tools address the need to increase the size of the parking supply as ridership grows towards the 2030 projected levels or higher.

Each tool is defined and the benefit of the tool to encourage or even catalyze development is outlined. Finally, each tool is accompanied by a recommended first step that can be used to inform early implementation of the strategy.

### OPTIMIZE EXISTING PUBLIC AND PRIVATE PARKING SUPPLY

This section outlines tools that can be used to increase the efficiency and utilization of the existing parking supply. Some strategies inform users of the location and availability of parking spaces. Others provide methods to mitigate short term high demands on parking spaces, such as during

peak hours or holiday seasons. Transit demand management (TDM) strategies reduce the demand for parking spaces by increasing the use of other modes to access the transit station by users.

#### #1 Wayfinding and Signage Program

**Description:** Informative signs are placed at key locations to guide and orient RTD patrons as they approach the station and navigate to parking areas. Branding or themes can be incorporated to improve user recognition and experience.

#### How Does it Support Catalytic Development:

- Strengthens gateway features
- Reinforces sense of place at station
- Establishes infrastructure that benefits and may reduce costs to future development

**First Step:** Develop a wayfinding and signage plan that creates a station brand identity and identifies signage locations.

#### #2 Real-time Parking Information

**Description:** Transit patrons are provided with real-time, dynamic information about parking space availability, location, and pricing.

There are many evolving technologies to deliver this information, including cell phones, internet, and digital signs.

#### How Does it Support Catalytic Development:

- Establishes infrastructure that benefits and may reduce costs to future development
- Provides data on utilization rates that can be used to project potential for shared parking

**First Step:** When parking utilization reaches 75%, compile a list of real-time parking methods reviewed in current parking studies. Using information collected, identify appropriate technology for use at the station.

#### #3 First and Final Mile Connections

**Description:** Provision of elements that increase opportunities for pedestrians and bicyclists to access the station using safe and recognizable routes. Examples of improvements include ADA-compliant sidewalks, bike lanes, multi-use paths, safe intersections, crosswalks, secure bike storage at the platform, and pedestrian-scale lighting.

**How Does it Support Catalytic Development:**

- Strengthens gateway features and reinforces sense of place at station
- Establishes infrastructure that benefits and reduces costs to future development
- Increases the connection between the neighborhood and station area
- Attracts more residents and customers to the station area

**First Step:** Consider first and final connections identified in station area plans and relevant planning documents for inclusion in prioritized TIP application lists.

**#4 Transit Pass Benefits**

**Description:** Employers provide free or discounted passes to employees. The intent of the program is to reduce demand for parking spaces and encourage use of transit.

**How Does it Support Catalytic Development:**

- Reduces parking space requirements and associated costs to businesses

**First Step:** Consider transit pass benefits implementation options, such

as law changes, employer encouragement, or Transportation Management Association (TMA)/Organization (TMO) creation.

**#5 Bike Share Program**

**Description:** Bicycle rental service that allows users to rent a bicycle for a short time. Most programs have an established network of docking stations at which bicycles can be rented or returned. Locating docking stations at the transit station allows transit users to reach destinations that are farther than walking distance.

**How Does it Support Catalytic Development:**

- Establishes infrastructure and practices that benefit and reduce costs to future development
- Supports local economy through private sector revenue creation

**First Step:** Work with existing bicycle share programs in the Denver region to locate docking stations close to station platforms.

**#6 Car Share Program**

**Description:** Automobile rental services that offer short term rental of cars that can substitute for private vehicle ownership. Station car



“Bike then Bus” shelters would assist passengers in first and final mile connections to neighborhoods, amenities and businesses.



Wayfinding signs installed near Peoria Station would direct pedestrians to nearby neighborhoods and amenities on safe established routes.

sharing programs locate vehicles at the station and allow transit users to reach destinations that are too far for walking or biking.

**How Does it Support Catalytic Development:**

- Establishes infrastructure and practices that benefit and reduce costs to future development
- Supports local economy through private sector revenue creation

**First Step:** Designate parking spaces close to platform “car share only” and promote locations to car share programs established in Denver region (i.e., eGo, Car2Go, Occasional Car, etc.).

**#7 Valet Parking Services**

**Description:** Increase capacity and improve efficiency of off-street parking facilities through valet parking services during the a.m. and p.m. peak hours.

**How Does it Support Catalytic Development:**

- Delays longer term implementation while market matures
- Establishes infrastructure and practices that benefit and reduce costs to future development

- Supports local economy through private sector revenue creation

**First Step:** Initiate discussions with valet service providers when peak hour parking utilization reaches 75%.

**#8 Parking Cash-out**

**Description:** Employers who provide free or subsidized parking to their employees offer a cash payment in lieu of a parking space. Employees that cash-out take transit, bike, walk, or carpool to work. The intent of the program is to reduce demand for parking spaces and encourage use of alternative modes.

**How Does it Support Catalytic Development:**

- Reduces parking space requirements and associated costs to businesses

**First Step:** Consider parking cash out implementation options, such as law changes, employer encouragement, or TMA/TMO creation.

**#9 Unbundled Parking**

**Description:** Unbundled parking separates the cost of parking from building costs. Instead

of automatically being included in the lease or rent, parking spaces are sold or rented separately. In some cases, building owners may be able to sell or lease excess parking spaces to adjacent land uses.

**How Does it Support Catalytic Development:**

- Reduces parking space requirements and associated costs to businesses
- Provides opportunities for additional revenue to private businesses
- Increases attractiveness of renting or leasing space to prospective tenants

**First Step:** Evaluate code changes to allow reductions to parking space requirements for developers or building owners that unbundle parking.

**#10 Time Restrictions**

**Description:** Limit parking duration to encourage parking turnover near land uses that are supported by multiple, shorter-term visits. This strategy can be used to encourage employees to utilize spaces in more remote lots or structures.

### How Does it Support Catalytic Development:

- Maintains parking supply for business patrons in close proximity to businesses

**First Step:** Identify on-street blocks that front retail and other businesses that rely on frequent customers visiting for short periods of time.

### #11 On & Off-street Parking Pricing

**Description:** Station patrons pay directly for using parking facilities. The spaces can be priced to manage parking demand and/or to generate revenue. There are many strategies that can be used to effect different outcomes, such as reduce parking demand and increase alternative mode use, encourage turnover to increase short term parking supply, and improve overall utilization of parking supply.

### How Does it Support Catalytic Development:

- Revenue generated can repay capital investment and ongoing O&M costs
- Ensures on-street parking availability for customers

**First Step:** Monitor on-street parking utilization and turn over to identify on-street blocks with highest parking demand.

### INCREMENTAL INCREASES TO PARKING SUPPLY

These tools outline strategies to provide more parking spaces when needed at a station but the market has not matured to support construction or there is not funding for new parking. Existing public parking supplies such as on-street spaces near the station or in residential areas with low utilization rates can provide the opportunity to increase the supply of spaces with very little cost. Leasing underutilized spaces in private lots can meet additional parking demand for a much lower cost than the construction of new surface spaces. New transit stations are often located in areas with predominately industrial land uses on large parcels with low parking utilization.

### #12 RTD Riders Park in Underutilized Private Lots

**Description:** RTD patrons park in a block of designated spaces in a private parking lot within a short walk to the station platform. RTD leases

the use of the parking spaces in a documented underutilized lot. This tool can be used during short-term periods of high demand such as during construction of additional parking or seasonally during DIA holiday peak parking demand.

### How Does it Support Catalytic Development:

- Delays longer term implementation while the market matures
- Provides public-private solutions to parking
- Supports local economy through private sector revenue creation

**First Step:** Conduct parking utilization study to identify underutilized lots within a 2,500 ft. walk to the station.

### #13 RTD Riders Park in Existing On-Street Spaces

**Description:** RTD patrons park in marked on-street spaces within a short walk to the station platform.

### How Does it Support Catalytic Development:

- Increases parking supply by using existing infrastructure while the market matures

- Develops pedestrian connection between station platform and adjacent land uses
- Eases transition to on-street time-restricted parking by establishing parking enforcement regimen

**First Step:** Conduct parking utilization study to identify blocks with underutilized on-street spaces within a short walk to the station.

### #14 Residential Parking Benefit District

**Description:** Transit patrons pay to park in designated on-street spaces in a residential neighborhood within a short walk from the station platform. Revenue from the parking fees is reinvested in neighborhood improvements such as sidewalks, multi-use paths, or traffic calming features.

#### How Does it Support Catalytic Development:

- Increases parking supply by using existing infrastructure while the market matures
- Improves first and final mile connections through private sector revenue creation

**First Step:** Identify neighborhoods within a short walk of the station and conduct parking utilization study to identify blocks with underutilized on-street spaces.

### #15 Private Operator Provides Additional Parking

**Description:** Private business provides additional surface or structure parking spaces that helps meet transit patron parking demand.

#### How Does it Support Catalytic Development:

- Reduces need for public investment in parking solutions
- Supports local economy through private sector revenue creation

**First Step:** Identify stations with anticipated large future parking demand and adjacent property owners that may be interested in future development.

### #16 Joint Venture Parking Structure

**Description:** A joint development is defined by RTD as “a development project that occurs in, on or adjoining an RTD transit facility that involves another public and/or private partner.”<sup>2</sup> Joint development projects on RTD land can trigger opportunities for shared parking solutions. The overall parking requirement can often be lowered,

<sup>2</sup> RTD Strategic Plan for Transit Oriented Development (2010)

in turn reducing the number of spaces constructed. Many land uses can “share” parking spaces because they do not require parking spaces at the same time. For example, an office building requires parking from 8 a.m. until 6 p.m. while a restaurant may require the majority of its parking from 6 p.m. until 10 p.m. A shared parking structure takes advantage of the mix of land uses in close proximity by sharing parking spaces among the uses. Transit commuter parking spaces can also work in a shared parking arrangement, with demand similar to that of office (e.g., 8 a.m. to 6 p.m.). In some joint venture agreements, a transit agency may offer or sell at a discount land owned by the agency at the station as part of a negotiation for spaces in the developer’s structure. Or a transit agency may purchase additional levels in a developer’s structure.

#### How Does it Support Catalytic Development:

- Reduces public investment in parking solutions
- Shared parking reduces parking requirements and related cost for developer
- Shared parking reduces footprint required for parking, increasing footprint available for other land uses

**First Step:** Identify RTD surface lots with market potential for conversion into other types of use, consult FTA Circular 7050.1 for guidance, and approach development through a solicited proposal process that is initiated by RTD through a RFQ/RFP or an unsolicited process that is initiated by a private developer or another public entity (RTD Strategic Plan for TOD, 2010).

## GOVERNANCE

Parking facilities can be managed as stand-alone parking supplies or as part of an area-wide pool that is available for a number of uses within a specified boundary, commonly referred to as a parking district. Municipal parking authorities, such as RTD or city governments, often manage stand-alone parking facilities that are provided for commuter parking. When parking is provided as part of a parking district, the parking supplies within the district boundaries are shared among all the uses in the district. The district supply may be managed using tools such as time restrictions and paid parking (tools discussed in previous sections) to optimize the utilization of the parking and

ensure spaces are available for all land uses. Revenues collected in a district are often used on transportation-related services and improvements such as multimodal paths or circulator shuttles.

### Municipal Parking Authority: RTD / City

**Description:** Parking facilities are constructed, maintained, and operated by a public entity, such as a regional transit agency or city government. The parking supply at individual parking facilities is generally provided for a specific use, such as transit commuter parking.

#### How Does it Support Catalytic Development:

- Can leverage publicly-owned property in desirable locations to encourage joint venture opportunities
- Facilitate improvements to create first and final mile connections and infrastructure that are desirable to developers

**First Step:** Identify government agency to manage parking facility.

### Parking District

**Description:** A district is defined within a walkable area and parking within the boundaries is managed as a resource shared by all land

uses. Management of the district can be by a municipality or private district agency. Shared parking among the land uses within the district often reduces the overall demand. Tools such as unbundled parking, parking cash-out, time restrictions, and on- and off-street pricing can all be used to manage the balance between parking supply and demand. Financing options in a district include paid parking, assessments, taxes (e.g., mill levies or TIF districts), and in-lieu fees.

#### How Does it Support Catalytic Development:

- Allows for sharing of parking spaces and reduces parking costs for developers
- Revenues from parking can be used to make improvements within the district
- Reduces need for public investment in parking solutions

**First Step:** Identify key stakeholders (e.g., business owners, property owners, developers, residents, municipalities) and outline potential district boundaries and benefits.

## Tools to Effect Surface to Structure Conversion

### FINANCING TOOLS

Conversion of surface parking to structured parking is dependent on a number of factors, most importantly the cost of land. Assuming land availability, it is less expensive and less complicated to acquire land for parking than to build structured parking until land prices exceed \$40 per square foot or more. Therefore, although there are multiple TOD urban design and placemaking benefits to structuring parking, it is not likely to take place at the most of the stations on the East Line (with the exception of 38<sup>th</sup> and Blake) unless the additional costs are provided by other sources. Short of outright city outlays, the funding sources for parking structures and other TOD infrastructure investments are based on the principle of value capture.

The transit investment at rail stations results in accessibility improvements that translate to greater development potentials and enhanced land values. A number of financing mechanisms are based on “value capture”, by tapping into these enhanced land values including TIF, metro

districts, and GIDs. Tax increment financing is the easiest to implement as it does not require property owners to pay additional taxes or assessments. However, TIF is only applicable in locations that qualify for urban renewal. Virtually all other value capture financing approaches are dependent on property owners agreeing to an additional tax or assessment to generate revenues over time including special districts.

### TAX INCREMENT FINANCING (TIF)

Urban Renewal Authorities (URA) are designed to address blighted economic conditions through the use of redevelopment powers including land assembly and tax-increment financing (TIF). TIF allows new property taxes from all taxing entities, as well as new local sales, and/or lodger’s tax generated in the URA district to be earmarked for public improvements in the district. URAs have a limited life of 25 years, after which the increase in property tax is returned to the City’s General Fund. URA tax dollars can either be applied to project costs as a “pay as you go” model, or future tax dollars can be bonded against to fund upfront capital costs.

Urban renewal enabled TIF has been used in Denver by the Denver Urban Renewal Authority

(DURA) and in Aurora by the Aurora Urban Renewal Authority (AURA) as a financing tool in redevelopment settings including a number of TODs. TIF earmarks new property and/or sales tax revenue generated from new development and funnels this “incremental” revenue toward various infrastructure costs including structured parking. From a private development feasibility perspective, TIF would be the preferred funding source, as there are only positive impacts in that no additional taxes or assessments are levied. However not all TODs will meet the URA eligibility statutes with respect to blight requirements so this funding source cannot be used in all locations. Additionally Central Park Boulevard is already in a DURA TIF district so the tax increment is already being directed for other improvements and would not be available for funding parking structures.

### IMPACT FEES

Impact fees are a one-time charges assessed against new development for the purpose of recovering a portion of the costs incurred by a local government for providing the public facilities required to serve new development.

Impact fees could be established for a defined station planning area as a way of covering all or a portion of the infrastructure investments needed to serve TOD within the area including structuring RTD parking.

A station area impact fee program would enable a local government to collect revenue from multiple developers within a defined station TOD area of influence to pay for a designated set of capital costs. The advantage of impact fees is they can be imposed by the City based on a nexus study and City Council approval and do not require property owner or large voter approvals. The disadvantages are they are a substantial up-front cost to developers and they generate a relatively small and uneven revenue flow that is difficult and/or expensive to bond against.

### **GENERAL IMPROVEMENT DISTRICT (GID)**

A general improvement district (GID) in a city is a public infrastructure district that applies additional property tax levy to a specific improvement area to pay for new public infrastructure. GIDs are commonly

used to fund shared infrastructure facilities. A GID can cover multiple public infrastructure goals and can be structured to address capital improvements such as parking garages, pedestrian improvements, and/or storm water management.

A GID has a number of advantages as a financing tool for area-wide TOD infrastructure and amenity improvements. It can be enabled by a city and would be applicable to all properties utilizing the funded investments. It can finance multiple types of improvements and services and can levy either property taxes or assessments to fund tax exempt bonds. Property owners would be required to join the district as a condition of zoning for TOD related development. The district would be structured so each property is paying its proportionate share of the improvements based on benefit received. The City of Boulder created a GID in Boulder Transit Village to help finance the cost of unbundled parking needed for new developments.

### **METRO DISTRICT**

A Metro District is an independent special district formed to develop and/or operate two or more public infrastructure improvements such as roads, utilities, parks, or public parking.

A metro district is most often created by a land developer (but requires the City's approval of the service plan) to apply an additional mill levy to future development to create a revenue stream to help pay for infrastructure costs.

Many developers will elect to form a metro district for in-tract improvements as a way of passing a portion of the up-front costs of development to the end user. However, master developers controlling large planned developments surrounding stations could utilize a metro district to fund area wide improvements as well. Metro Districts are generally developer-driven and better suited for large single-entity projects. The Pauls Corporation and Forest City have existing metro districts in place at the 40<sup>th</sup> & Airport and Central Park Boulevard stations respectively that could be expanded to address structured parking costs.

### **CITY OUTLAYS**

A number of cities have been motivated to invest in structuring RTD park-n-Ride spaces to facilitate new multi-use TOD on park-n-Ride lots near rail stations. RTD's Transit Access Guidelines provide some flexibility to move a portion of these surface spaces to less valuable land further away but

still within walking distance. These spaces could be included in dedicated or shared parking garages built by the public or private sector.

### **PUBLIC- PRIVATE PARTNERSHIP (P-3)**

RTD has participated in P-3s with cities and Urban Renewal Authorities as a financial partner to build new parking structures within TODs. This has primarily occurred in conjunction with the construction of rail lines prior to opening day. For example, RTD has agreed in principle to contribute \$2.6 million toward 400 parking spaces at a redevelopment in Olde Town Arvada adjacent to the Gold Line. The source of this funding is within the Federal Transit Administration's Full Funding Grant Agreement (FTA-FFGA) for the Gold Line. The parking garage would serve Olde Town Arvada business district as well as RTD patrons.

## **Future Parking Assumptions**

The recommendations for parking strategies at the East Corridor stations have taken into account some key assumptions about future parking operations and recent changes to RTD guidance. Some of these concepts have been discussed in previous sections but warrant mention again.

1. Future parking supply distribution and requirements will be based on demand and ridership patterns observed after opening day. When parking utilization at a station reaches 85%, an internal RTD task force develops proposals for providing additional parking will be considered in the context of RTD's budget solicitation for capital improvements. After ridership patterns emerge, there may be flexibility to redistribute the parking supply across the East Corridor, based on ridership patterns and demand.
2. Commuter parking spaces are considered to count towards ROD requirements only if RTD has "continual control." This is typically defined as ownership, a long term lease, or an easement.
3. RTD parking spaces provided in joint venture parking facilities must consider future parking in the ROD. In other words, ROD requirements for RTD commuter parking cannot be reduced without substantial justification in the joint venture structure. Parking requirements for the commercial or residential land uses parked in the joint venture structure may be reduced, per jurisdictional guidelines and if justified by the potential to share spaces with other uses, including RTD commuters.
4. Parking requirements identified in the ROD may be replaced if ridership goals are met through other means, including ridership generated from development surrounding the station, and are maintained (FTA circular on joint development 7050.1). Additional information regarding the role of dwelling units and ridership can be found in the 2013 RTD TOD Status Report.
5. Parking requirements identified in the ROD may be replaced by dwelling units if ridership goals have already been met and are maintained (FTA circular on joint development 7050.1). Additional information regarding the role of dwelling units and ridership can be found in the 2013 RTD TOD Status Report.
6. RTD can lease spaces in underutilized private lots adjacent to station areas to provide additional commuter parking supply. RTD currently uses this option

at the I-25/Broadway Station and the Boulder Church of the Nazarene.

- 7. Private partners can charge for parking in the joint venture facilities.

## Strategic Actions at Each Station

The project team developed conceptual designs for parking structures at the five stations along the East Corridor line. Specific strategies from the parking toolbox section are recommended for each station. Table P.6 provides an overview of the strategies recommended for each station. Details about how the strategies apply to each station, implementation ideas, and how they fit into the larger picture for development envisioned at each station follow.

**TABLE P.6: PARKING TOOLS TO EFFECT STRUCTURE TO SURFACE CONVERSIONS AT EAST CORRIDOR STATIONS**

TOOL	DESCRIPTION	38 <sup>TH</sup> & BLAKE	40 <sup>TH</sup> & COLORADO	CENTRAL PARK	PEORIA	40 <sup>TH</sup> & AIRPORT
<b>OPTIMIZE EXISTING PUBLIC AND PRIVATE PARKING SUPPLY</b>						
#1	WAYFINDING & SIGNAGE	X	X			
#2	REAL-TIME PARKING INFORMATION					X
#3	FIRST & FINAL MILE CONNECTIONS	X	X		X	
#4	TRANSIT PASS BENEFITS	X				
#5	BIKE SHARE PROGRAM	X				
#6	CAR SHARE PROGRAM	X				
#7	VALET PARKING (PEAK PERIODS)					
#8	PARKING CASH-OUT	X				
#9	UNBUNDLED PARKING	X				
#10	TIME RESTRICTIONS					
#11	ON & OFF-STREET PARKING PRICING					
<b>INCREMENTAL INCREASES TO PARKING SUPPLY</b>						
#12	RTD RIDERS PARK IN UNDERUTILIZED PRIVATE LOTS		X		X	
#13	RTD RIDERS PARK IN EXISTING ON-STREET SPACES		X			
#14	RESIDENTIAL PARKING BENEFIT DISTRICT		X			
#15	PRIVATE OPERATOR PROVIDES ADDITIONAL PARKING					X
#16	JOINT VENTURE PARKING STRUCTURE	X	X	X	X	X

NOTE: TOOLS SUCH AS BIKE SHARE, CAR SHARE, TRANSIT PASS BENEFITS, ETC. ARE IMPORTANT FOR MULTIMODAL CIRCULATION AND CAN HELP IMPROVE THE EFFICIENT UTILIZATION OF THE PARKING SUPPLY AT ALL STATIONS. HOWEVER, AT 38<sup>TH</sup> & BLAKE THEY ARE NOTED AS PART OF THE STRATEGY BECAUSE OF THE STATION'S PROXIMITY TO DOWNTOWN, EXISTING LAND USE PATTERNS, AND RECOGNITION THAT PROVIDING ADDITIONAL PARKING MAY NOT BE A COST EFFECTIVE WAY TO REACH RIDERSHIP PROJECTIONS AT THE STATION.

## Parking Management Technology

The East Line will have surface and structured parking supplies near the station areas. The parking supplies will vary from opening day to 2030 for each of the station areas. Each station will require new methods of parking management to achieve the catalytic, economic, neighborhood, and mobility benefits outlined in other sections of this Plan. Deploying new technologies, enacting new policies, and adapting to changing parking needs will be critical to minimizing the impact on existing residents near the stations, supporting the operations of existing businesses, meeting the peak parking demands of RTD riders, and supporting land owners who want to redevelop or diversify the land uses on their property near the station areas.

The following summarizes a list of technologies and management practices that would allow the private and public sector to more effectively manage their parking supplies. The technologies have a range of operational and capital costs. Each will need further consideration before they are deployed. However, each of the station

areas has private, public, and joint funding opportunities to cost-effectively manage parking using one or many of the following management technologies. It is likely that the parking demand and management at each station will evolve before the stations open, after they open, and as catalytic changes occur in the station areas over time. The City of Aurora, City and County of Denver, and RTD will continue to outreach with property owners, businesses and residents to determine if the following technologies are appropriate options to manage parking.

### FEE-COLLECTION SYSTEMS

RTD Park-n-Rides in the region have fare collection systems for vehicles registered outside of the RTD boundary and vehicles that are parked for longer than 24 hours periods. Vehicles parking for longer than 24 hours and vehicles outside of the district are two potential parking management challenges that will need to be addressed at East Rail stations. This is due to high number of vehicles that are registered outside of the RTD boundary that are forecasted to park at the 40<sup>th</sup> and Airport station and the estimated 50% of parking spaces that will be occupied at some East Line rail stations by Denver International Airport (DIA) travelers. Based

on these challenges the following technologies could be deployed to manage parking in RTD, municipal, or jointly provided parking supplies.

- **Pay and Display** parking stations distributed around surface parking lots that allow users to purchase daily or multi-day parking for their in and out of district vehicles
- **Pay by Device** parking space designations in surface lots that allow users to pay for daily or multi-day parking by mobile device for their in and out of district vehicles
- **License Plate Recognition** equipment that uses the State of Colorado Motor Vehicle Database to send a bill directly to users for their parking fees. This system could also allow users to setup prepaid parking accounts with RTD, municipal, or jointly provided surface parking lots

Future parking garages that are provided by RTD, municipalities, or in joint development projects will require management techniques that allow a balanced approach to shared parking. The deployment of new parking technologies in shared garages will minimize the total cost of providing the necessary RTD parking, maximize all available parking spaces in the future garages, and support the parking needs of existing and new

development around the station areas. RTD and Colorado State Law does not allow RTD to directly charge RTD patrons if they park a vehicle that has been registered in the RTD boundary for less than 24 hours. However, RTD can partner with the private sector and other municipalities to combine RTD Park-n-Ride parking spaces in garages that charge for parking (new examples include the Broomfield Park-N-Ride, Boulder Transit Village, and Old Town Arvada). These examples have preliminary parking management programs and are being monitored to determine the best management practices for determining “RTD parkers” from “other parkers”. The following provides a summary of the techniques that are being demonstrated and one that could be considered in the future.

- **RTD Rider Intercept:** under this management practice an RTD official gives RTD riders a parking validation ticket when leaving the station platform. This ticket is given to a parking attendant or inserted into a parking pay station when leaving a parking garage that has paid and RTD parking.
- **Two Ticket System:** under this management practice an RTD rider is provided two tickets from a parking machine

when entering the parking garage. The RTD rider brings the parking ticket on the train or bus to receive a validation stamp or transfer punch. The parking ticket with the validation stamp or transfer punch is given to the parking attendant or inserted into a parking pay station when leaving a parking garage that has paid and RTD parking.

- **RTD Smart Card:** the RTD Smart Card demonstration program could be modified in the future to provide validation at a parking garage that has paid and RTD parking. Under this management practice a set time would be established between an RTD Smart Card being swiped at a validator on the station platform and then at the gate of a parking garage.

## ENFORCEMENT TECHNIQUES

The public streets near the East Line station are a mix of local, collector and arterial thoroughfares. Some have existing parking supplies, some have informal parking supplies, and some do not currently allow parking. All of the East Line stations will have RTD provided surface parking lots on open day. Only one station has all of the future-potential parking provided on RTD property. All of the parking that is being planned for opening day was calibrated to the ridership forecasts that RTD prepared for East Line. A unique parking management challenge is the

direct access the East Line provides to Denver International Airport. This will be the first line that provides direct service to DIA. New parking enforcement techniques may be required to manage parking if the demand for parking at East Line stations exceeds the opening day forecasts or RTD patrons are not parking in the RTD provided Park-N-Ride surface lots. The following summarizes possible enforcement techniques that could be considered if parking overflows to public city streets of RTD parkers are parking on public streets for extended periods of time.

- **License Plate Recognition** equipment that uses the State of Colorado Motor Vehicle Database to issue warnings and violations to users parking illegally or for durations on-street that are not allowed by local ordinance. This system could also allow users to setup prepaid parking accounts with municipal parking operations to park on-street within the allowable durations.
- **Parking Benefit District** would establish boundaries around station areas to regulate parking or sell parking passes (using pay and display) to RTD patrons who want to park on-street. The parking proceeds from this district would be reinvested back into the commercial or neighborhood area within the boundary that was established.

## 38<sup>TH</sup> & BLAKE

The RTD ROD projects a demand for an additional 300 parking spaces at the 38<sup>th</sup> and Blake Station. However, given the proximity of the station to Downtown Denver and existing land use patterns, it is expected that there will be minimal need for more commuter parking. The recommendation for the station is to optimize the existing parking supply by implementing a variety of transportation demand management tools. The RTD property adjacent to the station that includes the 200-space surface lot and additional green space is a valuable asset. It's recommended that RTD leverage its land at the station into a joint venture development. An illustrative site design concept is included in this section that incorporates RTD's existing 200 spaces into a wrapped shared parking structure, but this is only one option of many to best utilize the land.

### Key Findings:

- Adjacent land is "catalyzing"
- Minimal need for more commuter parking

### Recommended Strategies:

#### #1 Wayfinding & Signage

- Primary implementation goal is create a sense of place at the station area and facilitate residents and employees to choose non-automobile modes to travel to and from the station.
- Wayfinding and signage should direct users to the station platform, bike and car sharing facilities, multimodal connections such as multi-use paths, and preferred originations and destinations.

#### #3 First & Final Mile Connections

- First and final mile connections will be critical to promote the use of alternative modes to reduce parking demand at this station.
- In addition to the sidewalk improvements planned at the station mentioned in the Existing Connections section of this report, the 2009 38<sup>th</sup> & Blake Street Station Area Plan and the 2011 38<sup>th</sup> & Blake Street Next Steps report identify and prioritize first and final mile connections for the station area.

#### #4 Transit Pass Benefits

- Existing employers within a 10-minute walk to the station would be encouraged to enter RTD's EcoPass program.

#### #5 Bike Share, #6 Car Share

- RTD and the City and County of Denver could promote the station to existing bike and car share operations such as B-cycle and eGo.

### Future Recommended Strategies:

#### #8 Parking Cash-out & #9 Unbundled Parking

- As residential and office land use developers begin to show interest in the station area, they can be encouraged to employ parking cash-out and unbundled parking strategies. Consider reducing parking requirements for developers that employ these strategies.

#### #16 Joint Venture Structure

- The RTD property adjacent to the station that includes the 200-space surface lot and additional green space is a valuable asset. It's recommended that RTD leverage its land at the station into a joint venture development. Three future joint venture opportunities have been identified:
  - › Option 1: Undeveloped sections of the RTD land is sold and replaced by a private development.

- › Option 2: The entire RTD property is sold to a private developer and the commuter parking spaces are transitioned into a developer-provided shared parking structure.
- › Option 3: RTD property is leased to a private developer and the commuter spaces are transitioned into parking structures wrapped with residential or commercial uses.
- The site design concept in Figure P.17 illustrates Option 3, incorporating RTD's existing 200 spaces into a wrapped shared parking structure. By constructing a second wrapped structure, a total of 769 parking spaces are provided. The 269 spaces in addition to the 500 recommended in the ROD provide parking for about 200 residential units or 125,000 SF of commercial development.



Opening day parking at 38<sup>th</sup> and Blake will consist of a 200-space surface lot connected to the station by a pedestrian bridge across the tracks.

FIGURE P.15 - 38<sup>TH</sup> & BLAKE STATION OPENING DAY PARKING



The East Corridor ROD projects a demand for a total of 500 parking spaces (300 additional parking spaces).

FIGURE P.16 - 38<sup>TH</sup> & BLAKE STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN

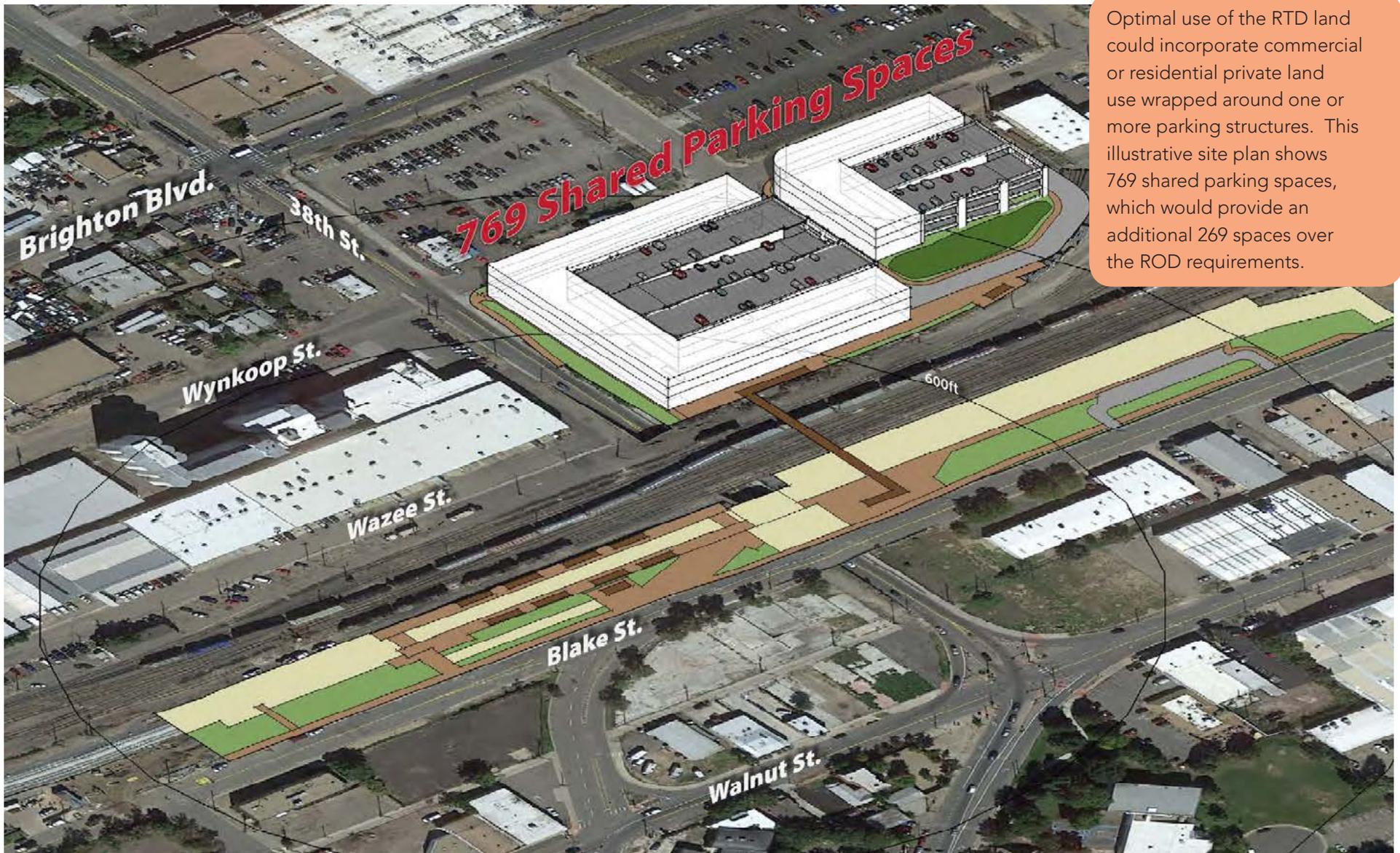


FIGURE P.17 - 38<sup>TH</sup> & BLAKE STATION TOD 2030 PARKING ILLUSTRATIVE DESIGN

## 40<sup>TH</sup> & COLORADO

The 40<sup>th</sup> and Colorado Station is anticipated to require additional commuter parking by 2030. There is anticipated to be significant demand to park at the station for DIA trips from neighborhoods like Cherry Creek accessing the station from the south. The ROD projects a demand for an additional 1,600 parking spaces for a total of 1,800 spaces by 2030 at the station. All strategies outlined in this section assume that additional commuter parking will be necessary. While the funding is included in RTD future programming, it may not be available for a number of years. Future shared joint parking structures are recommended, but will also require time to allow the market to mature. Therefore, the recommendations for the station are to implement strategies to supplement the opening day parking with existing underutilized public and private supplies in the short term. While the land uses adjacent to the station are primarily industrial, many are shifting to flex-industrial uses, and the parking utilization is higher than observed in many industrial areas. But as opportunities to lease underutilized

lots present themselves, this strategy should be pursued. The roughly 350 on-street parking spaces in the residential neighborhood west of the station offer another opportunity to bolster the commuter parking supply. A residential parking benefit district created could provide revenues that can be reinvested in improvements to the neighborhood like sidewalks along 40<sup>th</sup> Avenue.

Additional street connections across Market Lead and a pedestrian bridge across the tracks are key to catalyzing development in the station area as well as serving the transit-dependent neighborhoods near the station. The illustrative site design below incorporates these concepts by distributing parking facilities throughout the station area in four joint venture shared parking structures. These shared structures provide additional spaces to support residential units and commercial development.

### Key Findings:

- Station expected to serve a broad travel shed to north and south connected by Colorado Blvd.
- Under-served, transit-dependent neighborhoods adjacent to the station

### Recommended Strategies:

#### #1 Wayfinding & Signage

- Wayfinding and signage will be critical to support the implementation of a strategy that utilizes parking spaces located on-street or in private lots to supplement the commuter parking supply.
- Wayfinding and signage should direct commuter to the supplemental parking locations and to and from the station platform.

#### #3 First & Final Mile Connections

- First and final mile connections will be vital to connect the transit-dependent neighborhoods in the station area. Good FFM amenities and connections will also attract developers to consider the station area.
- A pedestrian bridge over the tracks to connect the northern Elyria-Swansea neighborhood to the station is an important connection that could prove to be catalytic to development at the station as well as reduce parking demand.
- A pedestrian or vehicle connection across the Market Lead would also be beneficial to the station area and the neighborhood west of the station. This connection is integral to strategy #14 Residential Parking Benefit District.
- Additional FFM connections are detailed in the Elyria-Swansea neighborhood plan.

### #12 RTD Riders Park in Underutilized Private Lots

- Currently, there is a fairly high demand for parking in private lots near the station. The utilization should continue to be monitored as demand for commuter spaces increases, and opportunities for leases can be pursued.

### #13 RTD Riders Park in Existing On-street Spaces

- There are about 100 on-street spaces located in the commercial area to the south of the station, within about a 5-minute walk of the station.

### #14 Residential Parking Benefit District

- A Residential Parking Benefit District is recommended bounded by the station area to the east, 40<sup>th</sup> Avenue to the south, Steele Street to the west and 42<sup>nd</sup> Avenue to the north (see Figure P.18).
- There are roughly 350 on-street parking spaces in the neighborhood west of the station. Based on utilization estimated at 15%, just under 300 of the on-street spaces could be leased to RTD patrons.

- Of these spaces, all are within a 2,500 ft. walk to the station and about one third of the spaces are within a 1,500 foot walk to the station.
- The revenue collected from the parking fees could be reinvested in the neighborhood on improvements such as sidewalks on 40<sup>th</sup> Avenue.

### Future Recommended Strategies:

#### #16 Joint Venture Structure

- The illustrative site design distributes the 2,600 spaces throughout the station area in four joint venture shared parking structures (see Figure P.21). The 800 additional parking spaces in addition to the 1,800 spaces in the ROD could support about 625 residential units or 400,000 SF of commercial development.



FIGURE P.18 - RESIDENTIAL PARKING BENEFIT DISTRICT

Opening day parking at 40<sup>th</sup> and Colorado will be a 200-space surface lot south of the station.



FIGURE P.19 - 40<sup>TH</sup> & COLORADO STATION OPENING DAY PARKING



FIGURE P.20 - 40<sup>TH</sup> & COLORADO STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN

FIGURE P.21 - 40<sup>TH</sup> & COLORADO STATION TOD 2030 PARKING ILLUSTRATIVE DESIGN

## CENTRAL PARK BOULEVARD

On opening day, Central Park Station will have 1,500 surface parking spaces located just south of the station. It is the only station in the corridor that will have the full number of parking spaces projected by the ROD on opening day. While no additional spaces are planned for the station, there are opportunities for the 1,500 spaces to be transitioned into shared joint venture parking structures, moving the station area closer to the vision of a TOD that is walkable and vibrant. The Stapleton developer, Forest City, owns the land south of the RTD land at the station. The City and County of Denver has outlined a series of small and large land swaps in the Central Park Station Area Plan (2012) between RTD and Forest City. By “swapping” land, early Forest City development could occur in closer proximity to the station platform. Commuter parking could be provided in surface lots on the southern property and transitioned into shared parking structures as development continues to grow in the station area. The figures below show illustrative designs for the small and large land swap scenarios.

### Key Findings:

- Station will have full ROD parking on opening day
- Land “swap” joint venture deals are possible near station

### Recommended Strategies:

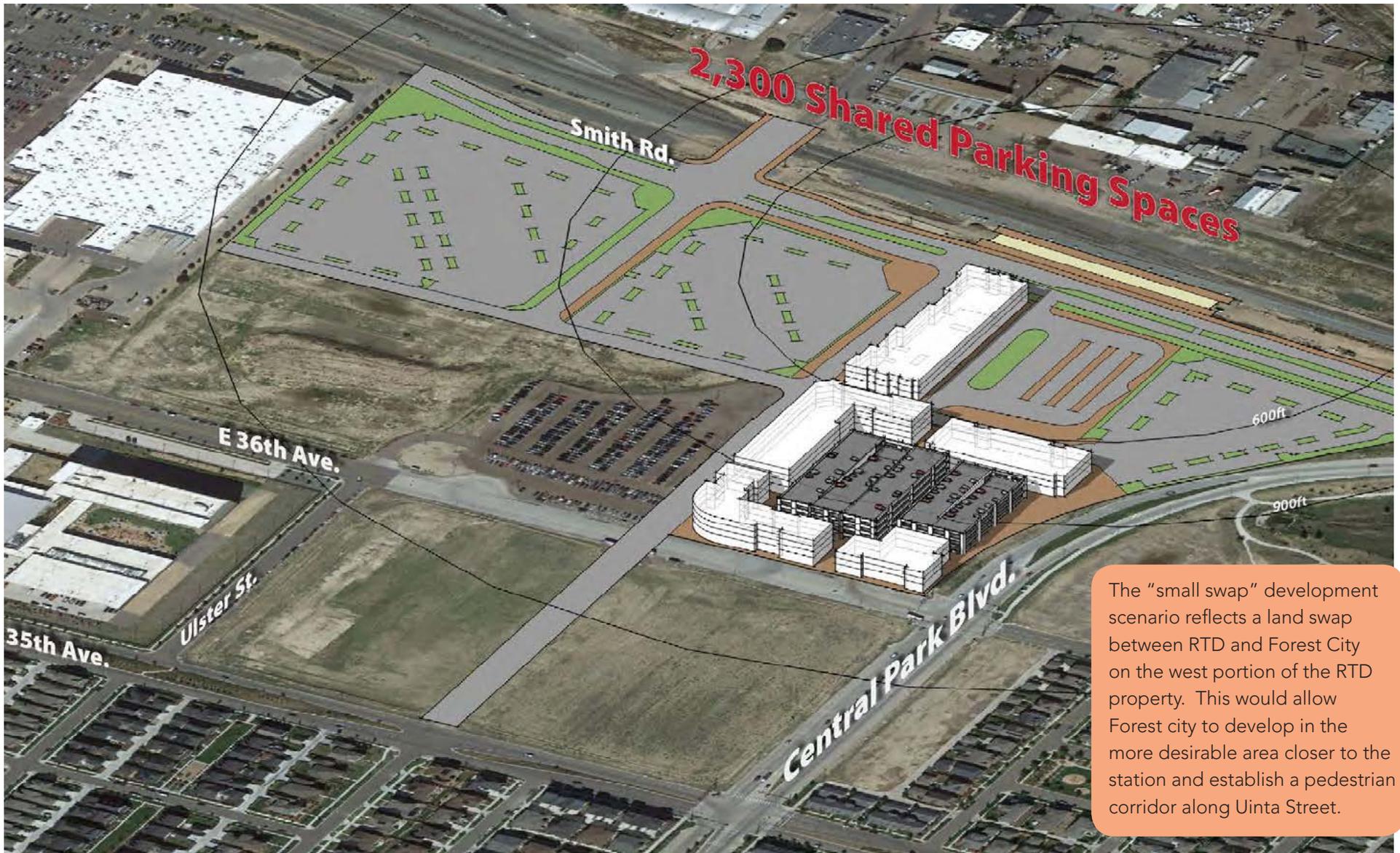
#### #16 Joint Venture Structure

- Begin working with Forest City on joint venture parking and opportunities for the small swap concept.
- The small swap site design shows 2,300 spaces, providing 800 parking spaces above the 1,500 commuter spaces. These additional spaces would support roughly 400,000 SF of commercial development (see Figure P.23).
- The large swap site design shows 3,600 spaces, providing 2,100 parking spaces above the 1,650 commuter spaces. This would support about one million square feet of commercial development (see Figure P.24).



On opening day, the full ROD parking will be provided at Central Park Station. This is a total of 1,500 surface spaces.

**FIGURE P.22 - CENTRAL PARK STATION OPENING DAY AND ROD PARKING**



The "small swap" development scenario reflects a land swap between RTD and Forest City on the west portion of the RTD property. This would allow Forest city to develop in the more desirable area closer to the station and establish a pedestrian corridor along Uinta Street.

**FIGURE P.23 - CENTRAL PARK STATION "SMALL SWAP" PARKING ILLUSTRATIVE DESIGN**

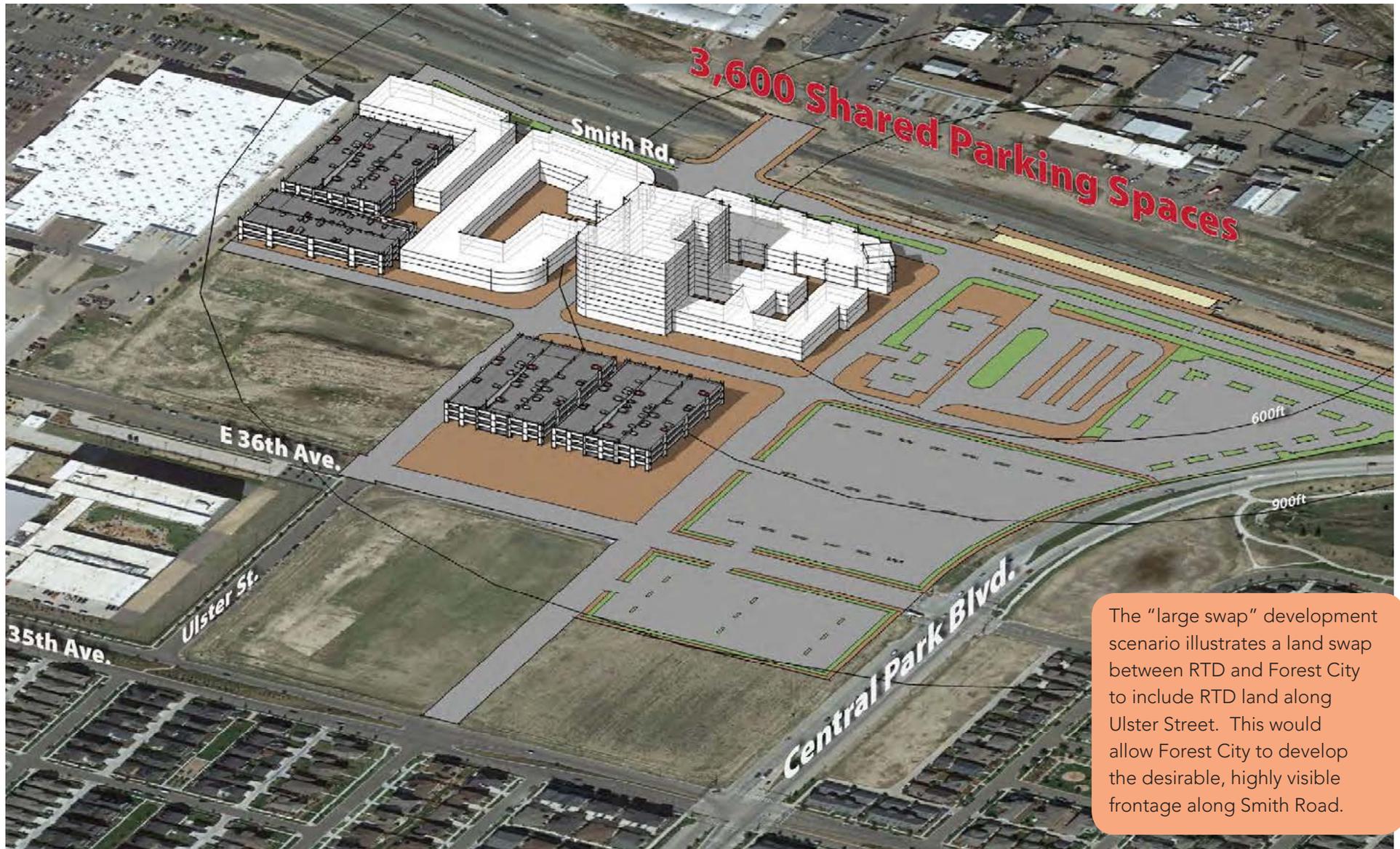


FIGURE P.24 - CENTRAL PARK STATION "LARGE SWAP" PARKING ILLUSTRATIVE DESIGN

## PEORIA

The ROD projects parking demand at the Peoria Station by 2030 to increase by 1,350 parking spaces. Adding these spaces would bring the total at the station to 1,900 parking spaces. Some portion or all of the additional parking spaces will need to be constructed in a new parking structure due to space constraints. Funding for additional parking at the station is not currently available. Redevelopment at the station area is expected to be slow, and when it does occur, fairly minimal as the industrial uses around the station are fairly well-established.

The parking strategy recommended at Peoria Station is to improve first and final mile (FFM) strategies to support the transit-dependent neighborhoods served by the station and to supplement the opening day parking with existing underutilized public and private supplies in the short term. As the demand for commuter parking spaces at the station grows, there is an opportunity to increase the supply available by leasing spaces in underutilized private surface parking lots. As outlined below, many private, industrial businesses within a 5-minute walk to the station have underutilized large paved surface lots. This

strategy has the potential to meet up to half of the estimated parking demand expected at the station by 2030. As the market matures, it is recommended that RTD pursue joint venture opportunities with property owners and developers to construct shared parking structures adjacent to the station.

There is a future need for an RTD maintenance facility along the Aurora Line. One of the locations for the facility may be the Peoria Station, which would affect the location and design of future additional parking at the station. Before siting the facility, an updated Environmental Assessment will need to be completed by RTD.

### Key Findings:

- Redevelopment likely will be minimal and long-term
- Rail maintenance facility may be located on future parking

### Recommended Strategies:

#### #3 First & Final Mile Connections

- First and final mile connections to the Morris Heights, future AHA housing, and the Montbello neighborhoods will greatly benefit the transit-dependent residents in these neighborhoods.

- The FFM recommendations for the station are outlined in detail in the Station Area and Peoria Street sections of this report.

#### #12 RTD Riders Park in Underutilized Private Lots

- The station is located in an area with primarily industrial land uses with large, often underutilized, surface parking lots (see Figure P.25). Leasing spaces in one or more of these lots when parking demand at the existing RTD surface lot reaches 85% would provide a way to meet additional demand without the need to build new parking surface lots or structures.
- Based on a parking utilization study done in the summer of 2014, there is a total of 560 striped, paved surface parking spaces in 7 private commercial lots north of 33<sup>rd</sup> Street (see table and figure below). Of these spaces, about 400 striped, paved surface parking spaces are currently not utilized. These spaces are all located within a 5-minute walk to the station platform.
- In addition, roughly 150 paved but unstriped ("informal") parking spaces are estimated to be on available on another private industrial property located in the same blocks and within a 5 minute walk to the station.
- In locations where private off-street lots are undeveloped or being used for storage there is potential for approximately 370 additional off-street parking spaces.

Table P.7 outlines the estimates of total parking spaces, utilization, and resulting estimated spaces that may be available for lease.

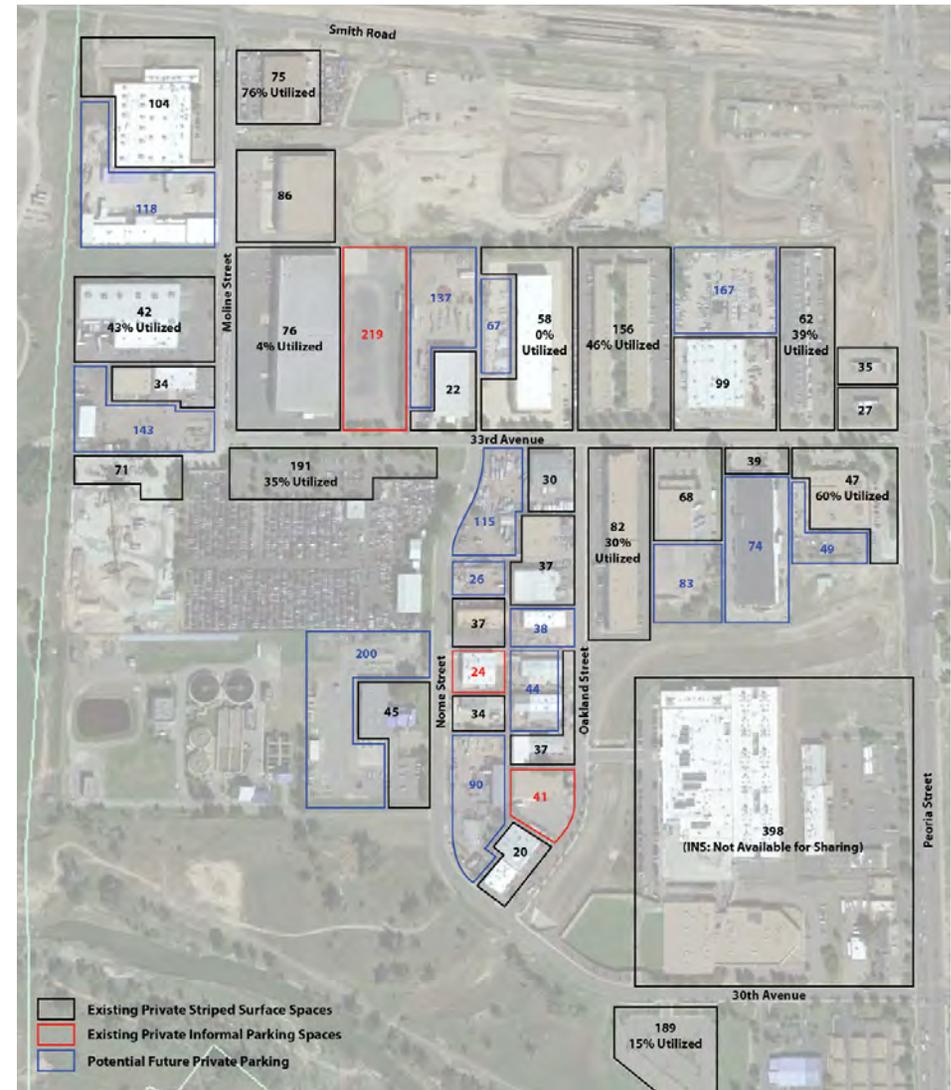
**Future Strategies:**

**#16 Joint Venture Structure**

- As the ridership and demand for commuter parking increases at the station, joint venture opportunities for a shared parking structure on the RTD property or private lots adjacent to the station should be explored.
- The illustrative site design distributes 2,400 parking spaces in the station area in four joint venture shared parking structures (see Figure P.29). This design shows 500 parking spaces in addition to the 1,900 spaces projected in the ROD. These parking spaces could support about 500 residential units or 250,000 SF of commercial development.

**TABLE P.7: ESTIMATED ADDITIONAL PRIVATE PARKING SPACES AVAILABLE AT PEORIA STATION**

TYPE OF PARKING SPACE	ESTIMATED PARKING SPACES	ESTIMATED UTILIZATION	ESTIMATED SPACES AVAILABLE FOR RTD PATRONS
PRIVATE SURFACE LOT PAVED & STRIPED	559	4 TO 46%	395
PRIVATE SURFACE LOT INFORMAL PAVED SPACES	219	30%	153
PRIVATE SURFACE LOT UNPAVED POTENTIAL	371	30%	257



**FIGURE P.25 - PEORIA STATION AREA PRIVATE EXISTING PARKING CAPACITY AND OBSERVED UTILIZATION**

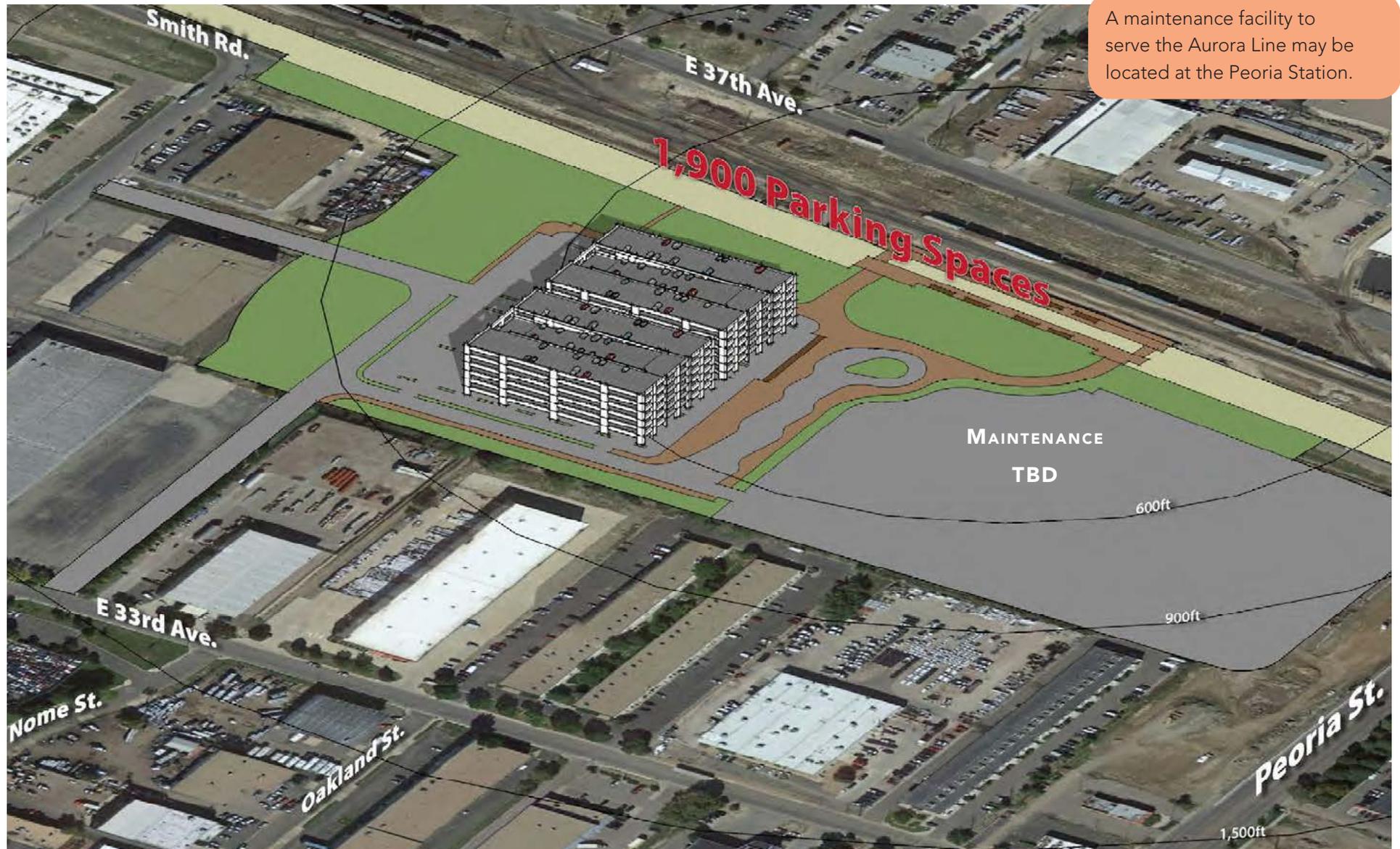


FIGURE P.26 - PEORIA STATION OPENING DAY PARKING



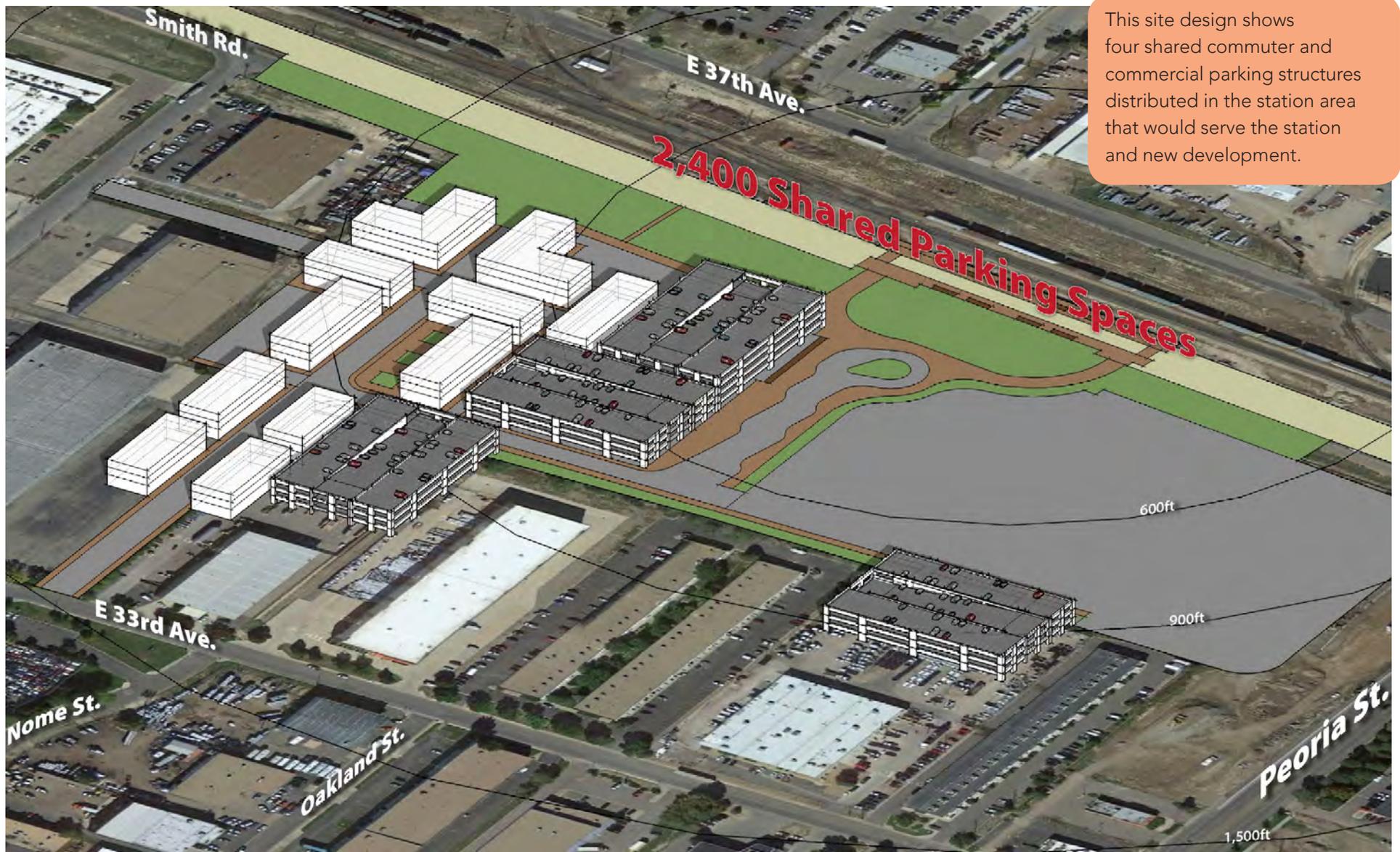
The ROD projects a need for an additional 1,350 parking spaces at the station provided as a mix of surface and structure spaces.

**FIGURE P.27 - PEORIA STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN**



A maintenance facility to serve the Aurora Line may be located at the Peoria Station.

FIGURE P.28 - PEORIA STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN



**FIGURE P.29 - PEORIA STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN – WITH MAINTENANCE FACILITY**

## 40<sup>TH</sup> & AIRPORT

The 40<sup>th</sup> and Airport Station is projected to have a demand by 2030 of over 1,100 additional parking spaces for a total of 2,200 parking spaces at the station. The additional parking spaces will require the construction of one or more parking structures. Two locations for the parking structure are proposed: on the existing site as recommended in the ROD, or west of the RTD site on DIA property.

Siting the structure on the northeastern corner of the existing RTD lot is the design in the ROD. While not depicted in the illustrative design, a small retail wrap of one or more sides of the garage could be considered to integrate with the development expected to be built on the land surrounding the RTD property.

Other potential options include siting new parking structures on the DIA property on the west side of the tracks, as shown in the figure below. This would make the existing RTD property available for redevelopment of additional transit-oriented uses. Utilizing the DIA property for parking has many benefits, including the ability for DIA to provide additional parking above the 2,200

spaces called for in the ROD<sup>3</sup>. For example, relocating a portion of the future planned parking spaces from other East Line stations instead to the 40<sup>th</sup> and Airport Station would provide an opportunity for increased TOD at stations closer to Downtown Denver. However, this may also lessen the TOD possibility for other East Line station joint venture (JV) parking opportunities.

### Key Findings:

- The following concepts are based on RTD ridership modeling. Any parking strategies for 40<sup>th</sup> and Airport should be further evaluated after a period of time has passed from the opening of the East Rail line.
- Reallocation of parking at 40<sup>th</sup> and Airport from other East Line stations may reduce the opportunity for JV development at other stations along the East Line and should be evaluated further after the opening of the East Rail line.
- DIA plans to pursue TOD development opportunities on property it owns west of and adjacent to the 40<sup>th</sup> & Airport Station. Currently DIA is working to develop a Master Plan for its property at the 40<sup>th</sup> Ave station that will include TOD development.
- Pauls Corporation and DIA are anticipated to provide future parking near the station area

<sup>3</sup> Further consideration would be necessary to determine if parking provided on DIA land could be applied towards the 2030 ROD requirement.

- Current RTD land could be “swapped” for joint venture TOD.

### Recommended Strategies:

#### #2 Real-time Parking Information

- DIA could consider real-time parking information, such as interactive signage, for their parking provided along the entire Pena corridor. The significant number of parking spaces recommended for the 40<sup>th</sup> and Airport station could be located in more than one structure. Providing real-time data that reports the location and availability of spaces to patrons encountering both the corridor and the station area itself will decrease congestion and reduce the unnecessary congestion derived from “trolling” for spaces.
- DIA has yet to determine how they will manage parking at station along Pena Boulevard. Parking opportunities to accommodate air travelers, airport employees, patrons of the associated TOD development, and commuter demand will be evaluated in their future studies.

#### #15 Private Operator Provides Additional Parking

- The projected parking demand based on the RTD modeling for the station is significant for the 40<sup>th</sup> and Airport station.
- At this time DIA is uncertain whether the travel demand, cost of construction, and

on-going maintenance of structured parking will be feasible to support revenue neutral operations. DIA is currently evaluating options for development of their station-adjacent land and will build parking appropriate for the uses based on future studies and demand.

### #16 Joint Venture Structure

- The site design shows an illustrative plan for siting parking on the DIA land west of the

station and developing the RTD land into a TOD (see Figure P.33). In this design, 4,500 parking spaces are provided, of which 900 spaces are located on the property located east of the station and serve the new TOD. The other 3,600 parking spaces are located in three structures on the DIA property. There are 1,400 parking spaces in addition to the 2,200 parking spaces recommended by the ROD for the station. In this example, it is assumed that the 1,400 parking spaces are located at the 40<sup>th</sup> & Airport station, reducing the parking spaces

that would be built at the following stations:

- 38<sup>th</sup> & Blake (300 spaces)
- 40<sup>th</sup> & Colorado (800 spaces)
- Peoria (300 spaces).

Figure P.30 illustrates the TOD-supportive redistribution of parking from the three stations to 40<sup>th</sup> & Airport Station.



FIGURE P.30 - TOD-SUPPORTIVE REDISTRIBUTION OF PARKING



FIGURE P.31 - 40<sup>TH</sup> & AIRPORT STATION OPENING DAY PARKING



The ROD projects a need for an additional 1,120 parking spaces at the station provided as a mix of surface and structure spaces.

FIGURE P.32 - 40<sup>TH</sup> & AIRPORT STATION ROD 2030 PARKING ILLUSTRATIVE DESIGN



FIGURE P.33 - 40<sup>TH</sup> & AIRPORT STATION TOD 2030 PARKING ILLUSTRATIVE DESIGN

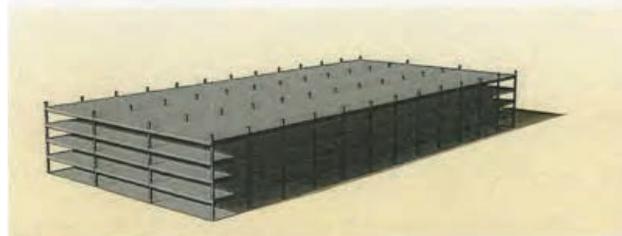
## Parking Structure Templates and Costs

Figure P.34 illustrates parking garage floor plates, dimensions, total spaces and estimated capital costs. They are samples of what is possible at the station areas. Each example is 1,000 parking spaces. The examples would ultimately have different opportunities for internal circulation, building wraps, and mechanical equipment accommodation. The examples are provided from RTD's West Corridor station area planning efforts with the cities of Denver and Lakewood.



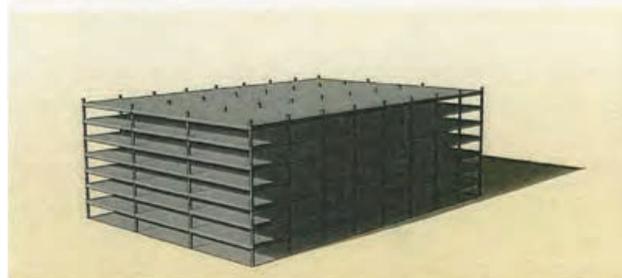
### **1,000 Space, 3-level structure, 4 levels of parking**

Floor Dimensions: 511' x 180' (92,025 sq. ft. per floor)  
 Spaces per floor: 270  
 Total Spaces: 1,150  
 Estimated Cost of Construction: **\$18,400,000 - \$20,700,000**



### **1,000 Space, 4-level structure, 5 levels of parking**

Floor Dimensions: 361' x 180' (65,025 sq. ft. per floor)  
 Spaces per floor: 203  
 Total Spaces: 1,015  
 Estimated Cost of Construction: **\$16,240,000 - \$18,270,000**



### **1,000 Space, 7-level structure, 8 levels of parking**

Floor Dimensions: 271' x 180' (38,025 sq. ft. per floor)  
 Spaces per floor: 143  
 Total Spaces: 1,147  
 Estimated Cost of Construction: **\$18,352,000 - \$20,646,000**

**FIGURE P.34 - PARKING STRUCTURE ILLUSTRATIONS**

## Additional Considerations and Next Steps

There are some conditions, guidance, and planning decisions outside of the scope of this plan or cannot be addressed until later in the process. The following is a brief summary of these topics.

**61<sup>st</sup> and Pena Station.** The 61<sup>st</sup> and Pena Station was originally proposed as the last eastbound station before DIA on the East Corridor line. Approximately 800 additional parking spaces were estimated to be required at this station, but are not included in the ROD projections for 2030 parking demand used in this report.

**Pena Corridor.** DIA owns land along the Pena corridor, including at 40<sup>th</sup> and Airport, and may provide substantial parking at these locations along the corridor. Additional parking provided by DIA along this corridor would influence the parking demand at 40<sup>th</sup> and Airport and possibly other stations along the East line. It is anticipated that DIA will consider variable parking rates in the corridor as well as support the system with interactive signage.

**Joint Development Guidance.** RTD is in the process of developing a plan that will provide further guidance on joint development.

**Monitor Parking Utilization.** In order to understand the utilization of the parking along the corridor and use this information to inform future parking and land use related decisions at the station areas, parking utilization at the stations must be monitored. Quarterly studies of the weekday parking utilization rates will provide details about growth in demand as well as data about hourly demand that can be used in future shared parking models for joint parking ventures.

