Reinvesting in the Future

A Progress Report and Analysis on Cherry Creek Growth, Development, Traffic, and Impacts on 1st Avenue

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Introduction

In the 2012 Cherry Creek Area Plan (CCAP) on "Reinvesting in the Future", the Cherry Creek Shopping District was described as *"providing identity, amenity and value with its variety of retail businesses—large and small, local and national. Enhancing the symbiotic relationship and the distinctive character of Cherry Creek North and Cherry Creek Shopping Center is important to the entire business area. While it was recognized by residents and business owners alike that reinvestment in Cherry Creek North was needed, the walkable character and rhythm of storefronts is essential to its unique character. Equally important, the Shopping Center has sites at the east and west end, as well as along the Greenway that will benefit from more intense development. Land use regulations must be crafted to encourage appropriate development in both areas."*

With this understanding and desire for Cherry Creek North growth, the Cherry Creek Business Improvement District (CCN BID) Zoning was studied and revised in 2013 to accommodate future development. Zoning building heights were allowed for 12 stories in a limited BID area; 8 stories on the remaining 1st Avenue area; a declining cascading height of 8 to 7 to 5 to 3 stories from 2nd Avenue to north of 3rd Avenue; and then a remaining previous zoning height limit of 4 stories north of 3rd to the neighborhood. Even though growth and development of Shopping Center was identified in the CCAP, zoning changes for the Shopping Center were not addressed.

An important part of the planning for the 2014 CCN BID Zoning changes was a forecasting of BID growth, parking and traffic, especially related to any potential quality of life effects on the surrounding neighborhoods. A professional traffic management company was engaged to assist with this important growth analysis. The CCN BID development growth with its associated traffic increases was forecasted with the input of BID business leaders, and applicable national traffic standards were used associated with the type of development.

Progress Update

This analysis will use the 2013 BID rezoning forecasting data on building growth and present a progress update related to the 10 year development estimations at that time. The purpose will be to illustrate how the revised CCN BID Zoning accelerated development and present any issues to be addressed due to this significant building square footage growth.

The analysis will also stress the need for traffic management planning related to the important major Cherry Creek West and Sears / Clayton developments and, most importantly, to the City's Denver Moves Cherry Creek planning process with its important focus on the major arterial of 1st Avenue and Speer Street. This analysis will propose potential improvements for consideration.

This document is divided into the following sections – (1) BID Development Growth; (2) BID Traffic Growth; (3) Major New Development and Traffic Impact; (4) Denver Moves Traffic and 1st Avenue Impacts; and (5) Improvement Comments and Recommendations.

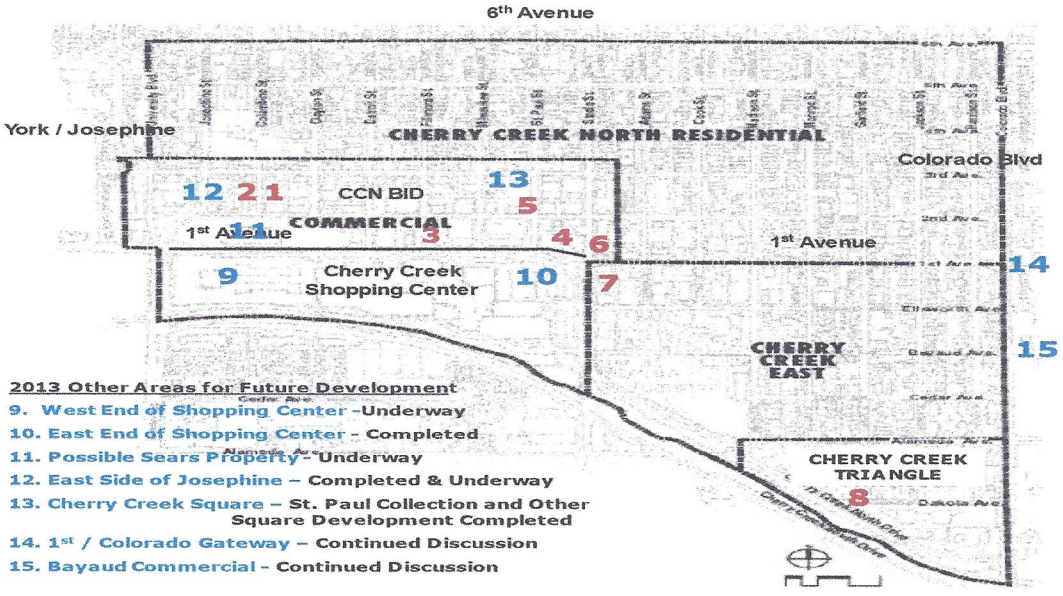
BID Development Growth

2013 Cherry Creek North Forecasted Developments Under Discussion

The first diagram shows the 2013 proposed developments being actively discussed at that time. Although the red listed areas were unidentified by project name then, the present names of the actual development are now listed either by name or as completed or pending development.

2013 Other Areas for BID Future Development Identified

This diagram shows the 2013 blue numbered areas for possible future developments identified at that time. Although mostly unidentified then, the names of the actual present development are listed as either by name or as completed.

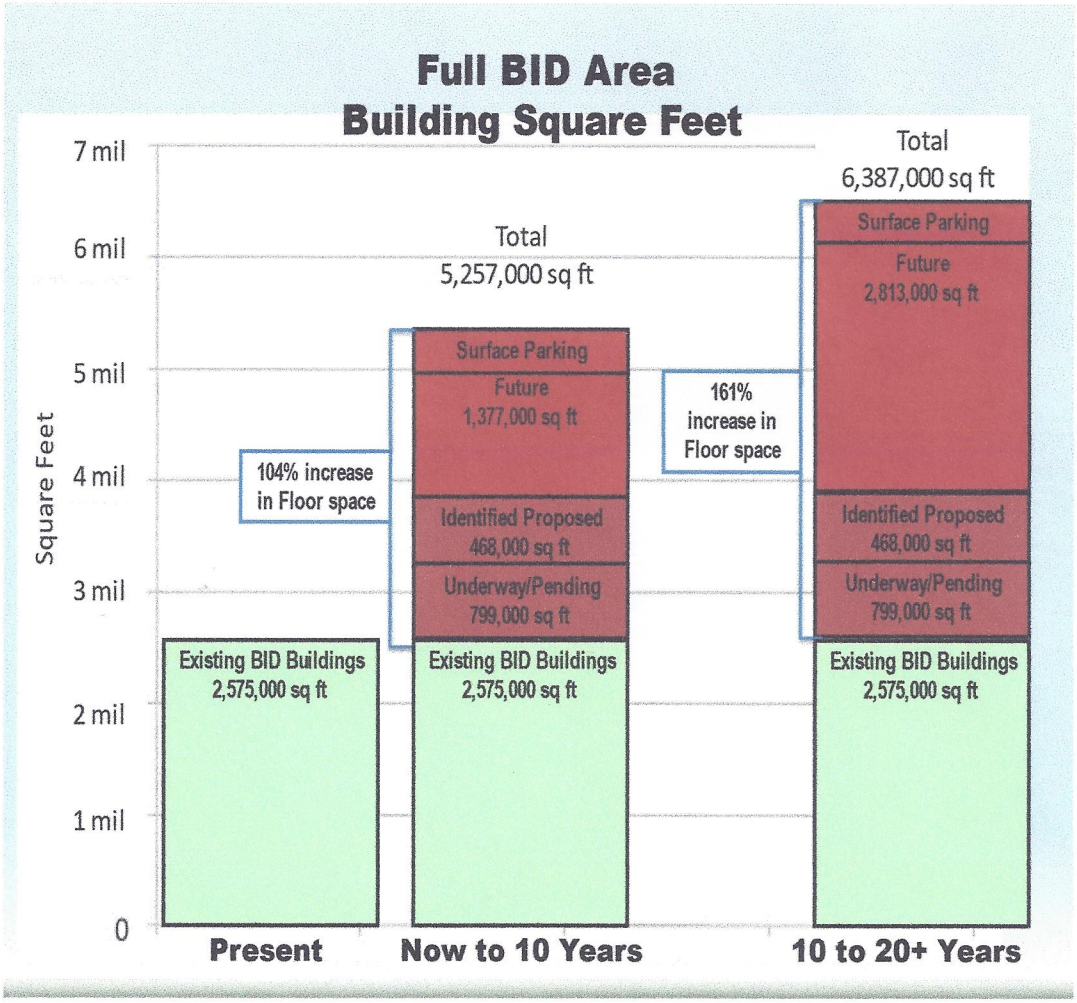


2013 Forecasted Building Square Feet for Next 10 and 20 Years

In 2013 a BID Zoning Task Force was formed to evaluate and update the special zoning district requirements for the CCN BID to accommodate the anticipated development growth. This diagram presents the present 2013 building square feet for the following areas in the BID.

- Existing square feet of buildings in the BID;
- Square feet for the underway or pending developments shown;
- Estimated square feet for the areas for possible future development;
- Further future development square feet; and
- Square feet for surface parking lots to be converted to development.

As shown on this page, the 10 year growth forecast was estimated to be 104% increase to over 5,257,000 square feet compared to the existing 2013 BID 2,575,000 building square feet. The 2013 forecasted BID development growth from 10 to 20 years was estimated to be 6,387,000 square feet which would be a 161% SF increase over the actual BID 2,575,000 building square feet.



On this page the 10 year growth chart updates the 2023 actual growth in building square feet since the 2013 BID Zoning Planning process. The 10 year 2023 actual BID SF development growth of **8,503,356** square feet has been a **61%** greater than the projected 10 year BID growth of 5,257,000 million square feet in development. Most amazing, there has been a 2023 **230%** increase or **8,503,356** square feet in new development compared to the existing 2013 BID 2,575,000 million square feet.

The number of completed 2023 development projects and their %s of total developed SF are 3 new major Hotels (23%), 1st Floor Retail (11%), 8 Office Projects (34%), and 5 Residential Projects (32%) with 284 apartments and condominiums.

10 Year Building Square Feet Growth (2013 - 2023)

Development Category	2013 Existing Square Feet (1)	10 Year Projected SF Growth (1)	2023 Actual Developed Square Feet	2023 Actual to 2013 10 Year Projected SF	2023 Actual to 2013 Existing % Inc
Existing BID Square Feet (2)	2,575,000	2,575,000	**1,931,250**	-25.0%	
Completed Development (3)	0	0	**2,168,513**	N/A	
Underway / 2024 Pending	0	799,000	**1,076,823**	34.8%	
Major Proposed (4)	0	468,000	**2,911,770**	522.2%	
Future Estimate (5)	0	1,377,000	**415,000**	-69.9%	
Surface Parking Lots	0	38,000	**0**	N/A	
Total Square Feet Growth	**2,575,000**	**5,257,000**	**8,503,356**	**61.8%**	**230.2%**

(1) 2013 BID Zoning Task Force Consultant Growth and Traffic Study Data

(2) 2023 25% SF Existing Reduction Due to New Development

(3) Completed Development Projects Since 2013

(4) Cherry Creek West and Clayton / Sears Projects

(5) 4 Projects Discussed - 2 Residential, 1 Hotel, 1 Office

BID Traffic Growth

At the same time as CCN BID has experienced its tremendous development growth, the level of vehicle traffic associated with this growth has also increased. As part of the 2013 CCN BID Zoning Task Force Study a professional traffic engineering firm was engaged to estimate the increase in traffic associated with building use SF and for specific BID / neighborhood intersections. National traffic trip standards were used to determine traffic levels.

BID Traffic Forecasting for the Next 10 and 20 Years

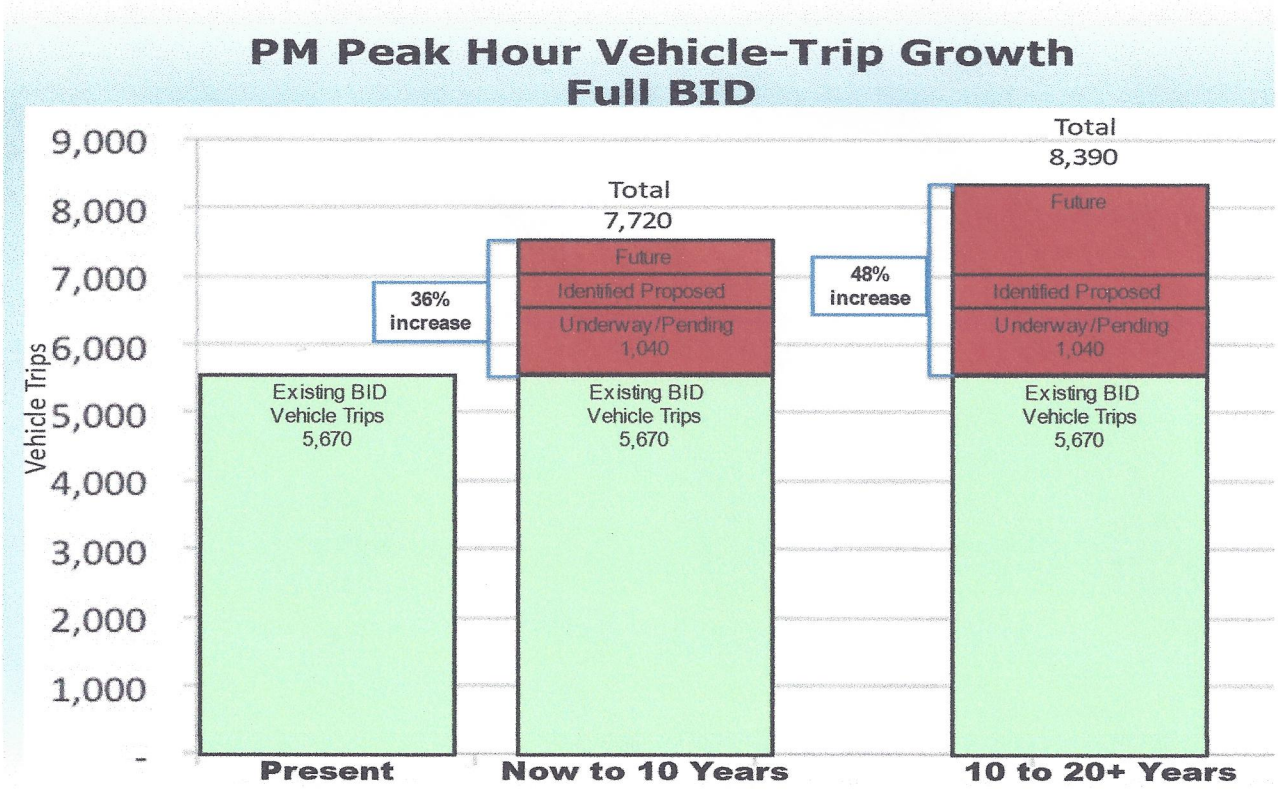
This 2013 vehicle trip growth for the BID uses national trips per 1,000 square of building for each use (retail, office, and residential). The data according to the forecasted development growth and by use indicated the following vehicle trip ratios for the PM peak hour.

2013 Actual BID Data: All Land Uses = 2.2 Trips / 1,000 SF

National Standards:

Retail = 2.71 Trips / 1,000 SF
Office = 1.49 Trips / 1.000 SF
Residential = 0.52 Trips / 1,000 SF

The following diagram illustrates the findings of the traffic evaluation for the entire business district and comparisons with the 10 year and 20 year projected growth in development square footage.



This vehicle trip chart uses the 2103 existing BID trip data and illustrates the important growth in vehicle traffic in the last 10 years. The additional **38%** growth is the increase of actual new development vehicle trips over the projected 2013 10 year study data. The most important growth data is the increase in trips from the 2023 actual trip calculation to the 2013 existing vehicle trips **– 88%**.

10 Year Vehicle Trip Growth Per PM Peak Hour (2013 - 2023)

Development Category	2013 Existing Vehicle Trips (1)	10 Year Projected Vehicle Trips Growth (1)	2023 Actual Vehicle Trips Growth	2023 Actual to 2013 10 Year Projected Trips % Inc	2023 Actual to 2013 Existing % Inc
Existing BID Vehicle Trips (2)	5,670	5,670	4,253	-25%	0.0%
Completed Development		0	1,955	N/A	N/A
Underway /2024 Pending		1,040	1,558	50%	49.8%
Major Proposed		0	2,715	N/A	N/A
Future Estimate		1,010	172	-83%	-83.0%
Surface Parking Lots		0	0	N/A	N/A
Total # of Vehicle Trips	**5,670**	**7,720**	**10,653**	**38%**	**87.9%**

(1) 2013 BID Zoning Task Force Professional Growth and Traffic Study Data

(2) 2023 Existing Trip Row Reduced by 25% Due to Existing Trip SF to be Reused by New Development SF

Major New Development and Traffic Impact

Important additions to the increased BID and Cherry Creek development growth will be two of the largest square foot projects in recent Cherry Creek area history. The first mixed use major new development project description and analysis is as follows:

Cherry Creek West

The approximate 12.5 acre property west of the Cherry Creek Shopping Center is proposed to be developed with 7 major buildings that would be allocated for retail, office, and residential uses. This property was not included in the 2014 BID rezoning process and will need to be rezoned from its present B-3 zoning to a new zoning designation that will allow 12 to 13 story building heights. The proposed City Zoning for the project is listed as Urban Center Neighborhood Mixed Use C-MX-12. The building heights would conform to the required Cranmer View Plan Corridor.

As is the Cherry Creek Shopping Center, the land property is owned by the Temple Hoyne Buell Foundation, which will not allow property owned residential condominium development. The proposed project development square footage by use listed in the East West Partners large development framework description to the City of Denver and the %s of total SF are:

Retail Use	90,000 SF	(5%)
Office Use	750,000 SF	(39%)
Residential Use	1,078,170 SF	(56%)
Gross Area Square Feet	1,918,170 SF	

Three of the seven proposed buildings will be devoted to residential use and will be required to abide by the City's affordable housing requirements, which would 10% of units reserved for low to moderate income households. The framework description lists the residential buildings to house 598 units.

Using the same 2013 national standard ratios to calculate CC West vehicle trips per PM peak hour, the number of vehicle trips was determined to be 1,922 trips for all three building uses.

Vehicle Trip Calculation Per PM Peak Hour

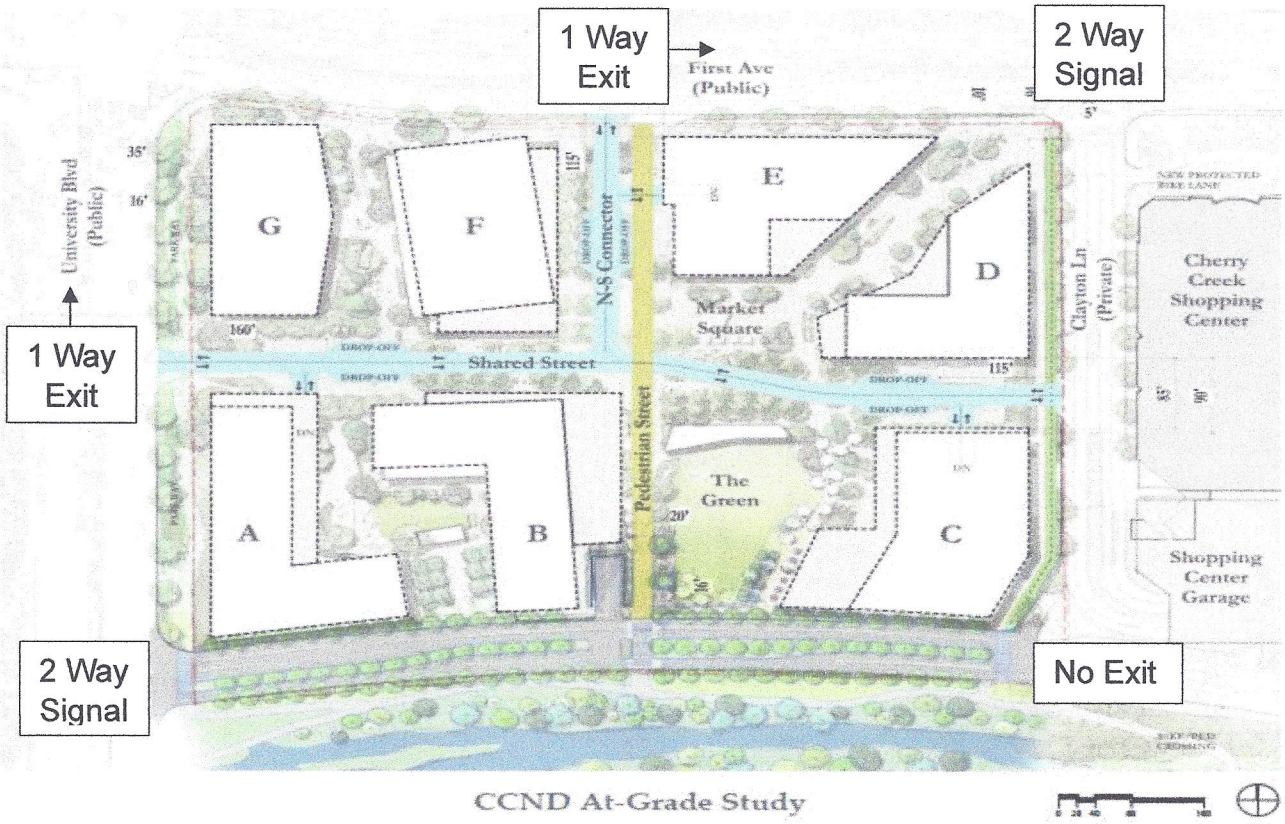
Type of Use	Square Foot Estimate	Vehicle Trip Ratio / 1000 SF	Calculated VehicleTrips
Retail	90,000	2.71	244
Office	750,000	1.49	1,118
Apartment Residential	1,078,170	0.52	561
Totals	**1,918,170**		**1,922**

2013 Actual BID Data: All Land Uses = 2.2 Trips / 1,000 SF

National Standards:

Retail = 2.71 Trips / 1,000 SF
Office = 1.49 Trips / 1.000 SF
Residential = 0.52 Trips / 1,000 SF

The following Cherry Creek West diagram from the East West Partners' large development framework document shows the seven buildings which will house office and residential space along with first floor / ground level retail as well as green space.



As can be seen in the development diagram, there will be the same four entrance and exit points as present. Since presently there are only two 2 way traffic signals to and from the property and, most importantly, there are median barriers on both University and 1st Avenue that limits 2 way turning at two entry / exit points, traffic flow will be difficult. Exit into the Shopping Center deck on CC North Drive will not be allowed. The close CC Drive South presently experiences a high traffic count with flow problems across Shopping Center CC Drive North access to enter CC Drive South.

As shown in the later Denver Moves Cherry Creek traffic analysis, 1st Avenue and University traffic volumes presently exceed maximum capacity. The Cherry Creek West development vehicle trip data shown below will only add to the present 1st Avenue traffic movement problems. In addition, the East West Partner's Large Development Framework document estimates that 3,000 new jobs will be created, which will participate in the estimated vehicle trip counts.

Street Intersection	University & Alameda	1st Avenue & Gilpin Street	University w/o 1st Avenue	1st Avenue w/o University	1st Avenue & Steele
Date	Oct, 2018	Dec, 2019	Oct, 2018	Nov, 2019	Oct, 2018
Average # of Vehicles / **Day**	41,528	54,156	45,808	53,594	42,393
Average # of Vehicles / **Hour**	1,730	2,257	1,909	2,233	1,766

Source: CDOT Data from Denver Moves Cherry Creek Project Analysis

The traffic count data clearly illustrates the highest volumes on 1st Avenue, and University would also reach maximum capacity if the traffic data was more current. The CDOT traffic count data is 5 years old, and the BID development traffic trip volumes have not been considered.

Without specific parking space information in the framework document, a Cherry Creek West parking projection was calculated using a non-metered development SF per CCN parking space or 743 SF / space, the 10% affordable housing parking requirement, and 1.5 parking spaces per non-affordable income restricted residential unit. This estimate is to be in line with the over 1,500 spaces in the Whole Food / Clayton Lane underground parking garage.

Cherry Creek West Parking Projection

Type of Use	Square Foot Estimate	# of Projected Spaces (3)	# of Residential Units
Retail	90,000	121	N/A
Office	750,000	1,009	N/A
Residential (1)	970,353	807	538
10% Affordable Residential (2)	107,817	6	60
	1,918,170	**1,944**	**598**

(1) 1.5 parking spaces per residential unit

(2) Affordable unit requirement of 1 parking space per 10 units

(3) 2013CCN SF/Non-Metered Parking Space Ratio = 2,575,000 SF/(4020-555) Parking Spaces = 743 CCN SF/Space Ratio

Sears / Clayton Project

As with the Cherry Creek West property, the old Sears site and some adjacent property have been identified for development for many years without much progress. Now, BMC Investments will develop the property, which will not include the Wholes Foods nor the present Clayton Lane condominium and retail properties. The Sears / Clayton project area is shown below.

This development will feature 126,000 SF consisting of a new 4 story building and ground floor / green street retail space; an 867,000 SF, 8 story apartment residential building; approximately 25 residential condominiums above the existing Clayton parking garage; and interior event and pedestrian space between buildings. The residential apartments will abide by the City's affordable housing requirement that 10% of the apartments be reserved for residents in the 60% median income level. Even though a large development review is required, the property can be developed under City's Use By Right Zoning, which should expedite development construction.

The underground parking lot will continue to exist with over 1,500 present spaces for retail and residential use. The parking chart below projects the parking needs related to the new development. The present parking entrances and exits on Clayton Street, 2nd Avenue, the Clayton Parking Deck, and ground floor garage delivery entrance used by Whole Food will be maintained for use.

Sears / Clayton Development Parking Projection

Type of Use	Use Square Foot Estimate	# of Projected Parking Spaces (3)	# of Residential Units
Retail	126,000	170	N/A
Office	0	0	N/A
Apartment Residential	713,340	960	516
10% Affordable Residential (2)	79,260	6	57
Condomiums (1)	75,000	38	25
	993,600	**1,136**	**598**

(1) 1.5 parking spaces per residential unit
(2) Affordable unit requirement of 1 parking space per 10 units
Spaces = 743 CCN SF/Space Ratio

New vehicle and pedestrian travel access points as shown on the previous rendering will be a new garage entrance and exit on 1st Avenue near the Whole Foods 1st Avenue entrance; a proposed pedestrian walkway across 1st Avenue; and a new 1st Avenue street entrance and exit that connects to the pedestrian and retail areas between the two buildings.

Vehicle trip counts and traffic flow for the Clayton / Sears development will have some impacts on 1st Avenue, 2nd Avenue, Columbine Street, and Clayton Lane. Traffic impacts on 1st Avenue from all of the new BID developments and the proposed Cherry Creek West project will be a concern. In addition, the BID travel flow from both 2nd and 3rd Avenues to Josephine and University was identified in the 2013 BID planning process by the traffic engineer as future increased traffic congestion areas.

Fortunately, the large % of the development devoted to residential use will produce less vehicle trips than the retail uses. The use of a valet service may also aid the traffic flow to the retail streetscape and services. The following chart analysis illustrates its traffic vehicle trip counts estimated for the project.

Vehicle Trip Calculation Per PM Peak Hour

Clayton / Sears Development Type of Use	Square Foot Estimate	Vehicle Trip Ratio / 1000 SF	Calculated VehicleTrips
Retail	126,000	2.71	341
Office	0	1.49	0
Apartment Residential	792,600	0.52	412
25 Condominiums (1)	75,000	0.52	39
Totals	**993,600**		**793**

(1) Previous Clayton Lane estimate of 25 condos with size estimated to be 3,000 SF each; 75,000 condo SF subtracted from gross residential SF of 867,600

From a pedestrian safety perspective, a new proposed pedestrian walkway across 1st Avenue will not be allowed without it being a traffic light protective crosswalk. With a traffic light at every 1st Avenue Cherry Creek intersection, another traffic light between 1st Avenue / University and 1st Avenue / Clayton Lane would not be allowed and the 1st Avenue median will need to remain or modified for future street improvement. The traffic light / pedestrian crossing at Clayton Lane will have to be used by pedestrians exiting the new street entrance between the project buildings as well as the present pedestrian flow from Clayton Lane and the proposed bicycle path on Clayton Street and Clayton Lane.

Denver Moves Cherry Creek, Traffic, and 1st Avenue Impacts

As stated in the Denver Moves Cherry Creek 2023 update document, the improvement process is a year-long planning effort led by the Department of Transportation & Infrastructure (DOTI) to develop a cohesive strategy for infrastructure development that achieves the City's mobility goals in the Cherry Creek neighborhood and surrounding area.

The City's State of the System provides an in-depth understanding of how people drive, bicycle, walk, roll, take transit, and move goods to and from Cherry Creek today. To supplement the System's Denver Moves Cherry Creek process, this analysis will utilize the shown previous planning and actual data from the Cherry Creek BID 10 year development growth, future planned developments, and the new major developments of Cherry Creek West and the Sears / Clayton Project. This will create a realistic data driven evaluation of Cherry Creek transportation, traffic, and the future of 1st Avenue to test Denver Moves Cherry Creek improvement recommendations, providing additional data, input, and recommendations for change.

Since the first top challenge that was identified by those individuals participating in the Denver Moves survey was "Traffic congestion within Cherry Creek makes it difficult to drive.", traffic will be the first issue to address.

Traffic

As is clearly illustrated in the previous section on 2014 CC BID Zoning planning and changes and summarized below, the growths in both building SF and traffic trips for BID retail, commercial, and residential developments have greatly increased from its 2013 existing experience. Building development has increased **54.3%** more than the 10 year planning forecast and **214.9%** more than the 2013 existing building SF. Vehicle trips have increased **36%** over the 10 year forecast and **84.6%** over the 2013 existing vehicle trips. All of this growth obviously has a great effect on the key Cherry Creek and key arterial intersection planning related to travel, congestion, parking, walkability, and bicycle safety.

10 Year Building Square Feet Growth (2013 - 2023)

Development Category	2013 Existing Square Feet (1)	10 Year Projected SF Growth (1)	2023 Actual Developed Square Feet	2023 Actual to 2013 10 Year Projected SF	2023 Actual to 2013 Existing % Inc
Total Square Feet Growth	2,575,000	5,257,000	8,503,356	61.8%	230.2%

10 Year Vehicle Trip Growth Per PM Peak Hour (2013 - 2023)

Development Category	2013 Existing Vehicle Trips (1)	10 Year Projected Vehicle Trips Growth (1)	2023 Actual Vehicle Trips Growth	2023 Actual to 2013 10 Year Projected Trips % Inc	2023 Actual to 2013 Existing % Inc
Total # of Vehicle Trips	5,670	7,720	10,653	38%	87.9%

(1) 2013 BID Zoning Task Force Professional Growth and Traffic Study Data

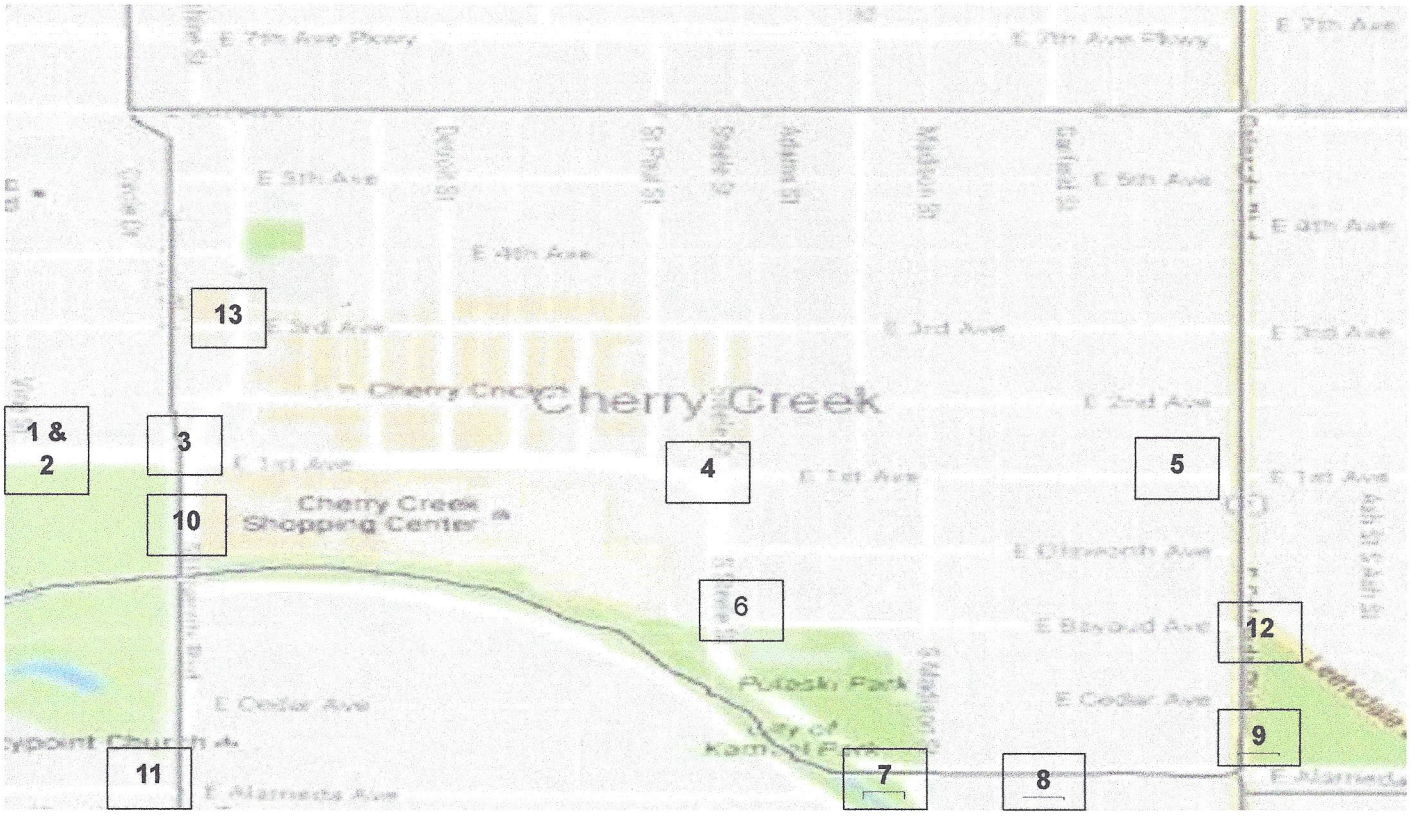
As described earlier, two new major development projects will also have an effect on traffic congestion with a specific impact on 1st Avenue and University. Both Cherry Creek West and the Sears / Clayton Project are redeveloping vacant or used property to create major SF additions. The following chart shows the SF growth and vehicle trip estimations.

Cherry Creek West and Sears / Clayton Project Growth

Major New Development Projects	Planned SF Development	Estimated Vehicle Trips
Cherry Creek West	1,918,170	1,922
Sears / Clayton Project	993,600	793
Total Projects	2,911,770	2,715

It must be kept in mind that both 2013 BID and new major development projects have or will have an effect on traffic counts. The intersection traffic counts provided in the Denver Moves Cherry Creek are from surveys conducted in 2018 or 2019 by CDOT and do not reflect the full growth in traffic and congestion from 2023 building SF and vehicle trips over the past four to five years.

The following Cherry Creek area map has the Denver Moves Cherry Creek traffic count intersections numbered for reference. The following page shows the referenced intersection CDOT daily vehicle trip counts, its hourly averages, and a 10% increase estimate in counts over the past 4 to 5 years. Obviously, AM and PM peak hours will have a greater share of the hourly traffic counts.



CDOT Traffic Counts and 10% Growth Estimate

Map #	Intersection	Month Year	Daily Count Ave	Hourly Count Ave	10% Daily Growth
1	Speer Boulevard Without Corona Street	Nov; 2018	26,591	1,108	**29,250**
2	1st Avenue and Gilpin Street	Dec; 2019	54,156	2,257	**59,572**
3	1st Avenue Without University Boulevard	Nov; 2019	53,594	2,233	**58,953**
4	1st Avenue Without Steele Street	Oct; 2018	42,393	1,766	**46,632**
5	1st Avenue and Colorado Boulevard	Nov; 2019	12,914	538	**14,205**
6	Steele Street and Bayaud	Oct; 2018	32,872	1,370	**36,159**
7	Alameda and CC Drive North	Nov; 2019	33,998	1,417	**37,398**
8	Alameda and Monroe Street	Nov; 2019	26,265	1,094	**28,892**
9	Colorado Boulevard and Leetsdale	Oct; 2018	53,982	2,249	**59,380**
10	Colorado Boulevard Without Alameda	Oct; 2018	36,224	1,509	**39,846**
11	University Boulevard Without 1st Avenue	Oct; 2018	45,808	1,909	**50,389**
12	University Boulevard Without Alameda	Oct; 2018	41,528	1,730	**45,681**
13	Josephine and 3rd Avenue	Feb; 2018	12,311	513	**13,542**

As defined by traffic engineering professionals, Area Traffic Capacity (ATC) or Annual Average Daily Traffic (AADT) can be defined as **the maximum number of vehicle trips which have their destinations in a given area or cross that area in a certain time interval or on an annual basis**. This means, the maximum number of vehicles that can, at a given time, move or park in the area.

What is considered a high Annual Average Daily Traffic? High-volume roadways are considered those with an AADT of **50,000 or more vehicle trips**. Low-volume roads are considered those with an AADT of 400 or less trips. Two professional engineering sources give the following guidance on arterial traffic volume at a speed of 35 miles per hour.

4 lane (w / left turning lanes)	12,000 vehicles per day minimum
4 lane (w / left turning lanes)	**36,800 vehicles per day maximum**
6 lane (w / left turning lanes)	**55,300 vehicles per day maximum**

With this guidance information the previous chart with attention to both Daily Count and 10% Increase columns shows the intersections **in red** that exceed the 4 lane with left turning lane street of 36,800 vehicles per day maximum guideline. Related to 13 intersections listed in the chart from the Denver Moves Cherry Creek document, **11** of these intersections are associated with the Speer, 1st Avenue, Steele, and Alameda travel corridor. Each travel corridor street has 2, 3 or 4 vehicle lanes and 1-2 turning lanes in each direction, which are shown on the chart in the Recommendations section.

Of these 11 intersections, **6 (#1-4, 11, 12)** are directly related to **1st Avenue** that would include the 10 year and projected Cherry Creek BID and Cherry Creek West development traffic growth. Of these six 1st Avenue related intersections, 5 (#2-4, 11, 12) exceed the maximum vehicles per day guideline above in both the CDOT Count and the 10% Growth Increase columns. If the Speer and Corona intersection had included the Corona traffic counts, it would also have exceeded the guideline's maximum vehicles per day.

Development growth will obviously have a stressing effect on traffic patterns to 1st Avenue, University, Colorado, and the surrounding neighborhoods. Speer, 1st Avenue, Alameda, and Leetsdale is a major transportation corridor from outside the Cherry Creek area to downtown Denver. It is estimated that over 50% of the daily 1st Avenue traffic is associated with through traffic to downtown and 50% to areas within Cherry Creek or along the travel corridor.

The impact from the new major developments, continuing BID future developments, and their associated traffic volumes will have a detrimental effect on business and quality of life for customers, employees, visitors, and neighborhood residents. In addition, heightened street congestion will only divert traffic from 1st Avenue to other surrounding arterials and streets, as can easily be seen today with the significant traffic growth on Cherry Creek Drive South and University.

Since the important focus of concern in Denver Moves Cherry Creek and this analysis is related to 1st Avenue traffic and its contributing developments, the document will offer improvement recommendations and comments in each area of this analysis.

Comments and Improvement Recommendations

This section will be devoted to recommendations on each of the affected four Cherry Creek areas in this analysis.

- Cherry Creek North Business Improvement District
- Cherry Creek West and Cherry Creek Shopping Center
- Sears / Clayton Project
- Speer, 1st Avenue, Alameda, Leetsdale Travel Corridor.

Each recommended improvement time table attempts to be realistic in both short (1-4 years) and long term (5-10 years) improvements.

Each recommendation would need to be discussed with all related parties and studied before any could be approved for implementation. Any recommendation improvement cost will need to be analyzed and determined as their benefit to the Cherry Creek community.

Cherry Creek North Business Improvement District (BID)

The Cherry Creek North BID growth has had the greatest traffic effect on 1st Avenue, University, and surrounding neighborhood streets. Actual development has significantly exceeded the 10 year forecasts shown in the 2013 Rezoning Study data. The attraction of businesses and their office space needs to the BID has been accelerated by the desire of certain businesses to move from other areas of the city. The walkability and attractiveness of Cherry Creek North has influenced residential home and apartment development. With all of this growth comes the need for parking and efficient traffic movement to support business customers and to maintain the quality of life for residents.

Recommendation #1 (Short Term) – **Support and Maintain Cherry Creek North BID Zoning**

The 2014 rezoning process was a productive, cooperative process that greatly enhanced the previous BID zoning to allow and promote greater development within its boundaries. Even though there may be interest in exceeding the present zoning limitations, it is important to recognize that the rezoning requirements should be maintained to order to minimize future traffic growth and mobility problems.

Any transit improvement is considered a long term investment so development growth by the present zoning will be essential to addressing vehicle counts and traffic congestion.

Recommendation #2 (Short Term) – **Study the Value of a BID Parking Benefit District**

A Parking Benefit District (PBD) ties the economic benefits of performance parking directly to improving the quality of life in the immediate area. Specific improvements would need to be identified to improve mobility for pedestrians, bicyclists and vehicles as well as well as identifying required funding sources.

PBDs support parking operation and maintenance, which can increase local sales tax revenue and reduce traffic congestion. They do not include revenue from parking violations or parking permits, but offer an avenue to make parking work better and support community goals at the same time. Area residents and businesses are often more receptive to PBDs as they can see revenues reinvested in local neighborhoods. Tourists and visitors typically use the parking meters most, so there is less of an impact on local stakeholders.

Recommendation #3 (Short Term) – **Implement a BID Valet Parking Service**

Parking difficulties were identified as a major problem in the Denver Moves Cherry Creek document by survey participants and often heard in comments from BID customers and neighborhood residents. With the limited on street parking for customers and residents and customer reluctance to use underground parking, a centralized BID area for a paid valet service should be organized and tested. It would provide a convenient one stop and walk opportunity for customers and residents using cars and would increase customer satisfaction.

Recommendation #4 (Short Term) – **Maintain the 2013 Development and Traffic Study**

As has suggested and shown to be beneficial in this analysis, using accurate data to aid in community decision making is important. Updating development and traffic study data on a period and timing basis to project future growth and needs will help plan the future more accurately. A professional planner and traffic engineer should be engaged by the BID to update the study formally.

Cherry Creek West and Cherry Creek Shopping Center

This major pending development will have a significant impact on 1st Avenue traffic and its efficient movement through Cherry Creek. This proposed 1,918,170 square foot development will create the highest grouping of high rise buildings in the Cherry Creek area. Most important to 1st Avenue, the 7 building development will create 1,922 vehicle trips in the PM peak hour, contributing to an intersection that has presently reached its maximum vehicle capacity according to traffic standards.

Recommendation #1 (Short Term) – **Reduce Building Heights to Reduce Traffic Impact**

To help reduce the present high traffic counts on 1st Avenue and University, the following Cherry Creek West changes are recommended.

(1) reduce the building heights from the proposed 12 – 13 stories to 8 stories, which would be consistent with the Cherry Creek BID Zoning.

(2) change the numbers of proposed office buildings from 4 to 3 and change the number of proposed residential buildings from 3 to 4.

Since community residential space is needed more due the number of existing and new office space developments, new mixed use development should emphasize residential use. Increasing

the residential SF will have a dramatic reduction in traffic volumes generated by the project. The vehicle trip standard for office use is approximately 3 times the standard for residential use, and the standard for retail use is 5 times the level of residential traffic trips. As shown in the chart below, an estimate of 713 traffic trips per PM peak hour should assist in lessening the traffic impact on 1st Avenue and University.

Cherry Creek West - Helping Reduce 1st Avenue and University Traffic

Uses	# of Stories	# of Buildings	Proposed SF	# of Stories	# of Buildings	Modified SF	SF Change
Retail			90,000			54,900	
Office	13	4	750,000	8	3	461,538	
Residential	12	3	1,078,170	8	4	718,780	
Totals		**7**	**1,918,170**		**7**	**1,235,218**	**682,952**

Uses	# of Stories	# of Buildings	Proposed Vehicle Trips	# of Stories	# of Buildings	Modified Vehicle Trips	Trip Change
Retail			244			149	
Office	13	4	1,118	8	3	688	
Residential	12	3	561	8	4	374	
Totals		**7**	**1,923**		**7**	**1,210**	**713**

Recommendation #2 (Short Term) – **Update Traffic Flow and Counts**

Traffic movement to and from the entrances / exits of the Cherry Creek West development would be limited in direction from the property, by presence of landscaped medians, and multiple lanes of traffic. The amount of congestion will be significant. The vehicle trip counts used in the Denver Moves Cherry Creek document and thereby also used in this analysis are 4 to 5 years old.

A current professional traffic engineering study of the 1st Avenue and University intersection traffic volumes and movement should be immediately instituted. As shown in the above chart, the analytical use of data can help achieve any desired traffic and vehicle trip count goals.

Recommendation #3 (Long Term) – **Plan to Implement the Cherry Creek Waterway Plan**

To improve quality and appeal of the Cherry Creek Waterway, the improvement plan that was created by Jeff Shoemaker and his firm should be implemented. The project will improve the biker and pedestrian safety on the busy Cherry Creek bike path, quality of life for all residents, and the beauty of the creek. It would surely enhance the present attractiveness of the Cherry Creek Shopping Center, any Cherry Creek West development, and residential properties.

Cost estimates would need to be updated, and funding sources would need to be identified and pursued.

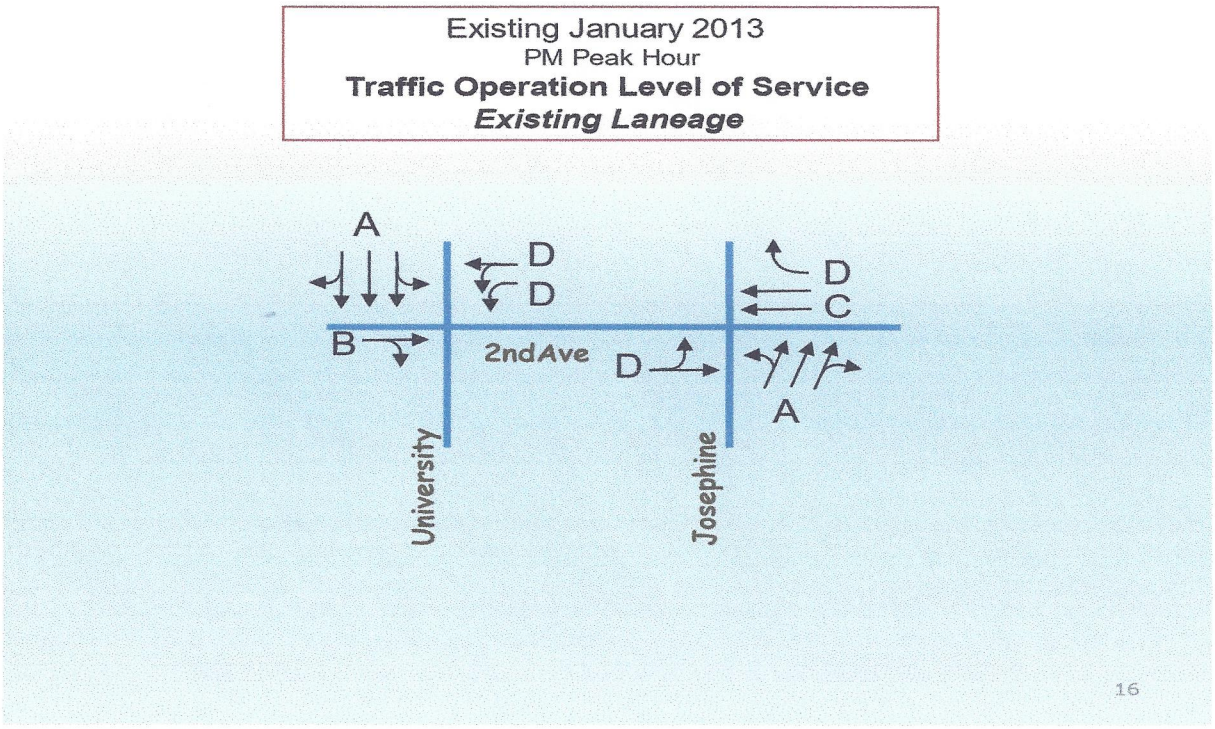
Sears / Clayton Project

The Sears / Clayton project is an important major development for residential housing in the BID. It will provide 867,600 SF of residential space for 482 units and 126,000 SF of retail space. The present underground and deck parking will provide sufficient space for parking. The Whole Foods facility and its surface parking will be maintained. Vehicle and pedestrian streetscape will enhance the retail experience. Valet parking will be provided. New entrance and exit access to the garage may increase 1st Avenue traffic.

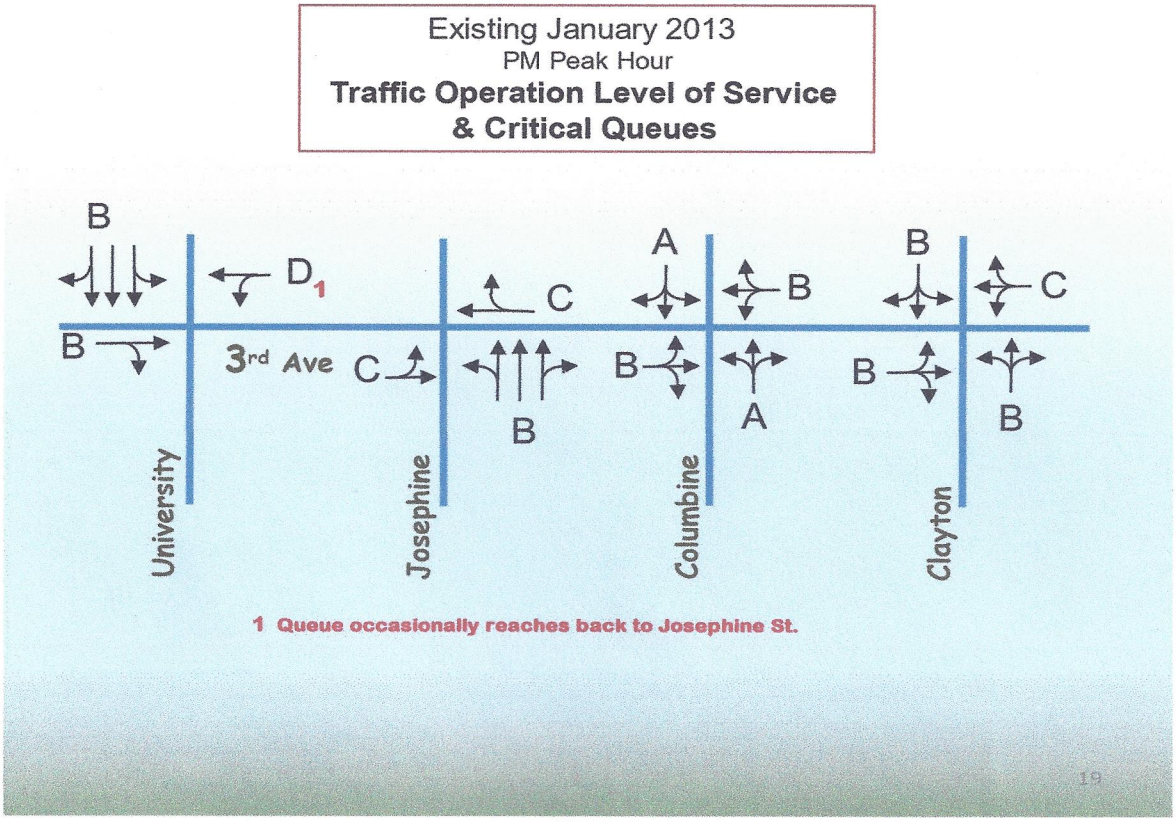
Recommendation #1 (Short Term) – **Study Traffic Mobility**

Since traffic movement to and from the entrances / exits of the Sears / Clayton Project development would be limited in direction from the property, it may increase the congestion on 2nd Avenue and in the BID. With current development construction moving towards implementation, a current professional study of the traffic movement and vehicle trip counts on 1st Avenue, Clayton Lane, and 2nd Avenue should be immediately instituted. Ways to reduce vehicle trips and congestion should be sought.

The following two diagrams on existing traffic on 2nd Avenue and 3rd Avenue are from the 2013 traffic study that was conducted by the traffic engineering assisting with the analysis and forecast of CCN BID development growth. The 10 year traffic forecasts for both avenues estimated greater traffic growth and congestion, which can easily be seen now. Level D is serious congestion.



The February 2018 CDOT vehicle count for 3rd Avenue and Josephine was 12,311 per day or 512 vehicle per hour average.



Recommendation #2 (Short Term) – **Study Pedestrian Safety**

Pedestrian safety has been and will be a serious community concern for all customers, employees, and residents. Fatalities have occurred at some 1st Avenue intersections. The proposed pedestrian crosswalk across 1st Avenue, the existing Clayton Lane traffic light pedestrian crossing, and pedestrian use of Clayton Lane and its proposed bicycle lane should be studied to ensure maximum pedestrian safety and convenience.

Speer, 1st Avenue, Alameda, and Leetsdale Corridor Transit

With the Denver Moves focus on Cherry Creek, 1st Avenue was gained the most attention. Unfortunately, the past planning date on the present and future growth of BID and CC Shopping Center development has not been used to help traffic analysis. In addition to the 1st Avenue focus, the development growth vehicle trip traffic has impacted the movement and congestion of the entire Speer, 1st Avenue, Alameda, and Leetsdale travel corridor.

The earlier Cherry Creek vehicle trip chart clearly illustrated those corridor intersections exceeding the maximum vehicle trip counts. Developing the travel corridor with the present number of lanes

shown below and the presence of landscaped / creek medians will take significant and long term planning and resources. Reducing traffic is an immediate need.

Recommendation #1 – Study the Transit Travel Path for Cherry Creek

Since 50 % of 1st Avenue traffic is related to through traffic and not traffic specific to the Cherry Creek North area, it is important for the Speer / 1st Avenue / Alameda / Leetsdale corridor to be planned and identified. It only seems likely that this corridor would need to capture as much of the corridor traffic as feasible and would include both Glendale and Aurora, which may create funding and implementation difficulties, depending upon the specific transit option is chosen. It is important to determine the corridor length – the further the corridor stretching out Leetsdale, then one transit option may be more effective. If the corridor is shorter and more situated from Cherry Creek to downtown, then another transit option may be more effective.

Recommendation #2 – Study the Transit Effect on Present Street Lanes and Medians

As the traffic corridor segment chart below illustrates, there are differences in the number of street lanes, turning lanes, and median size along the entire corridor. For the transit options to be studied, each will need to document clearly if any potentially negative effects will occur to business, community, and residential property.

As an example, Speer Avenue is a Denver historic street with significant median space devoted to landscaping and the Cherry Creek waterway that flows between the two Speer street directions. This transit issue may be complicated by bicycle path improvement interests that could also contribute to community and property effects and values.

Speer / 1st Avenue / Alameda / Leetsdale Traffic Corridor

Travel Corridor Segments	# of Travel Lanes West	# of Turn Lanes West	# of Travel Lanes East	# of Turn Lanes East	Median Between Lanes
Speer / 6th Avenue to Broadway	4	1	5**	1	Creek
Speer / Corona Street to 6th Avenue	4	0	4	0	Creek
1st Avenue / Speer Boulevard to Corona Street	3	1	3	2	Landscape
1st Avenue / University to Steele Street ***	3	2	3	2	Landscape
1st Ave / Steele Street to Bayaud Street ***	3	2	3	1	Landscape
Bayaud / Steele to Cherry Creek North Drive	2	2	2	1	Landscape
Cherry Creek North Drive to Jackson Street	2	0	2	1	Landscape
Jackson Street / Alameda to Colorado Boulevard	3	1	2	2	Landscape
Colorado Boulevard / Alameda to Leetsdale	3	2	3	2	Landscape
Alameda / Leetsdale to South Cherry Street	2	2	2	1	None
Leetsdale / South Cherry Street to Holly Street	2	1*	2	1*	None
Leetsdale / Holly Street to Monroe Street	2	1*	2	1*	None
Leetsdale / Monroe Street to Quebec Street	2	1	2	2	None

* Shared Middle Turn Lanes
** Speer Tunnel Splits into 3 and 2 Lanes to Become 5 Lanes to Logan Street
*** 8 Total Traffic Lights - 1 at Each Intersection and 2 Traffic Lights at 1st and Steele Intersection

A professional traffic engineering firm needs to be engaged to determine how transit options can be implemented and their effects on each corridor street. The study results and its estimates on implementation vehicle count reduction and the cost of implementation must be clearly discussed with all affected parties and documented clearly.

#3 Recommendation (Long Term) – Study Transit Options

In the 2014 Cherry Creek Area Plan and Denver Moves Cherry Creek Update, thoughts on the need for transit are mentioned for the improvement in vehicle trips. This is not a unique Denver issue, since many transit development options have been discussed with various ideas implemented in many US cities. The Denver uniqueness related to Cherry Creek has always been its location and its distance to access the Regional Transportation District (RTD) Light Rail System. RTD buses must be used to reach Light Rail stations, which discourages and limits full ridership. With RTD financial difficulties and ridership changes, some Cherry Creek bus route changes have been reduced or eliminated, creating more vehicle trip demand.

Ideas, such as bus rapid transit (BRT), street cars, subway / underground street, or others are frequently mentioned. Since Cherry Creek development growth and its traffic will continue to increase over the next 10 years, transit seems to be only alternative to reduced traffic on at least some of the corridor. If a transit alternative reduces travel lanes on corridor streets, the reduction of traffic may be difficult to achieve. All alternatives must be carefully and professionally evaluated.

The alternative concepts with minimal advantages and disadvantages may be considered as follows:

Bus Rapid Transit – The system provides dedicated buses that stop at less stops than normal bus service, which might produce less car trips. BRT system would need to be defined and implemented at designated starting and desired end points and may intersect with other arterials. Some information may relate to normal bus service.

- Advantages
  - Communities are using BRT as a powerful tool for economic development by increasing capacity in transit corridors by providing faster and more attractive transportation options.
  - BRT can reduce the number of cars on the road and reduce emissions from idling in traffic.
  - Most buses can accommodate up to 50 passengers.
  - BRT buses may have comfortable accommodations that increase ridership quality.

- Disadvantages
  - High initial infrastructure costs with **dedicated travel lane** that would be taken from existing travel lanes.
  - Limited coverage and accessibility in non-urban areas,
  - Dependence on specific stations and routes.
  - Potential for overcrowding during peak travel periods.

- Limited flexibility in terms of stops and routes.
- Is normally more expensive than some other alternatives

Streetcar – The system is similar to BRT which its goal to reduce vehicle traffic. It is found often closer to downtown areas with heavy traffic volumes and congestion.

- Advantages
  - Found In areas with heavy transit use close to downtowns.
  - Can provide a smoother ride.
  - Has greater capacity than bus
  - Has safer/faster boarding for those with disabilities, children in strollers, etc.
  - Can accommodate 30 sitting passengers.
  - Do not require a dedicated travel lane and share street travel lanes with cars.
  - May be less expensive to implement.

- Disadvantages
  - Is more expensive for the amount of ground they cover.
  - Normally slower than BRT because they share the right of way with cars.
  - may accommodate less passengers per car at times.
  - may take more travel trip time than BRT.

Subway / Underground Street – This alternative would be fast and less congestive with traffic but would be cost prohibitive to implement. Most likely, it is not a feasible alternative.

Regional Transportation District – Even though this option may not be unique, the implementation of RTD bus service for the entire corridor would be the least expensive and easier to implement. It could be established without having to use a dedicated travel lane and would only stop at key points. The normal bus service could also be reinstituted for Cherry Creek. Ways to enhance rider experience and interest in bus service should be considered.

References:

1. 2013 and 2023 Denver Property Taxation and Assessment System Records
2. 2013 Cherry Creek North BID Cumulative Traffic Study, TDA Colorado
3. 2023 Development Report, Cherry Creek Chamber of Commerce
4. Cherry Creek West Large Development Framework Document, East West Partners
5. Denver Moves: Cherry Creek, Study Update and Draft Projects, 2023
6. 2021 Transportation Engineering Design Standards, City of Lakewood, Traffic Engineering Division
7. "Numbers Every Traffic Engineer Should Know", Mike Spack, PE, PTOE