

Infrastructure & Transportation Summary — 2024

Executive Summary

Infrastructure upgrades in 2024 focused on road resurfacing, bicycle infrastructure, and public transit improvements. This report covers completed and ongoing projects across all city districts for the calendar year 2024 (January 1 - December 31, 2024). Total infrastructure investment in 2024 reached \$18.5M, representing a growth rate of +3.9% compared to 2023 (\$17.8M) and continuing a 4-year expansion trend with a compound annual growth rate (CAGR) of +11.8% since 2020.

Historical Infrastructure Investment Trends (2020-2024)

Total Annual Investment:

2020: \$12.5M (baseline year)
2021: \$14.2M (YoY growth: +13.6%, cumulative: +13.6%)
2022: \$16.1M (YoY growth: +13.4%, cumulative: +28.8%)
2023: \$17.8M (YoY growth: +10.6%, cumulative: +42.4%)
2024: \$18.5M (YoY growth: +3.9%, cumulative: +48.0%)
5-year total investment: \$79.1M

Road Resurfacing Trends:

2020: 8.5 km upgraded (\$7.2M, \$847/m)
2021: 9.8 km upgraded (\$8.5M, \$867/m, +15.3% km growth)
2022: 11.2 km upgraded (\$9.8M, \$875/m, +14.3% km growth)
2023: 13.1 km upgraded (\$10.5M, \$801/m, +17.0% km growth)
2024: 12.5 km upgraded (\$10.8M, \$864/m, -4.6% km growth)
Total 5-year: 55.1 km resurfaced
Cost per meter trend: +2.0% average annual increase

Bicycle Infrastructure Expansion:

2020: 3.6 km new lanes (\$1.8M, \$500/m)
2021: 4.2 km new lanes (\$2.3M, \$548/m, +16.7% growth)
2022: 5.8 km new lanes (\$3.1M, \$534/m, +38.1% growth)
2023: 7.1 km new lanes (\$3.8M, \$535/m, +22.4% growth)
2024: 8.2 km new lanes (\$4.2M, \$512/m, +15.5% growth)
Total 5-year: 29.0 km of bike lanes added
Growth rate: +127% since 2020 baseline

Public Transit Stop Development:

2020: 4 new stops (\$1.5M, \$375k per stop)
2021: 5 new stops (\$1.4M, \$280k per stop, +25% growth)
2022: 6 new stops (\$2.2M, \$367k per stop, +20% growth)
2023: 8 new stops (\$3.5M, \$438k per stop, +33% growth)
2024: 9 new stops (\$3.5M, \$389k per stop, +12.5% growth)
Total 5-year: 32 new transit stops
Average cost per stop increasing due to enhanced features (+3.7% annually)

Department Contacts

Transportation Department:

Director: Robert Thompson
Email: r.thompson@citytransit.gov

Direct Line: (403) 555-0234
Office: 403.555.0235
Mobile: +1-403-555-0236

Road Maintenance Division:

Supervisor: Linda Park
Email: linda_park@roadmaint.gov
Phone: 403-555-0345 ext. 102
Emergency Hotline: 1-800-ROAD-FIX (1-800-7623-349)

Cycling Infrastructure:

Coordinator: Michael Stevens
Email: m.stevens@bikelanes.gov
Office: (403) 555-0456
Text line: 403.555.0457

Transit Operations:

Manager: Patricia Wong
Email: pwong@transit.city.gov
Phone: +1 403 555 0567
Pager: 403-555-0568

District Infrastructure Metrics (2024 vs 2023)

| District_ID | Road_2024_km | Road_2023_km | YoY_% | Bike_2024_km | Bike_2023_km | YoY_% |
|-------------|--------------|--------------|--------|--------------|--------------|--------|
| D01 | 4.0 | 3.8 | +5.3% | 1.2 | 0.9 | +33.3% |
| D02 | 3.5 | 3.2 | +9.4% | 0.8 | 0.6 | +33.3% |
| D03 | 2.0 | 2.5 | -20.0% | 3.0 | 2.8 | +7.1% |
| D04 | 1.0 | 1.8 | -44.4% | 0.4 | 0.5 | -20.0% |
| D05 | 1.0 | 0.9 | +11.1% | 3.0 | 2.1 | +42.9% |
| D06 | NULL | 0.9 | N/A | 0.8 | 0.2 | +300% |

Figure 1: Infrastructure Investment Growth Trends

Infrastructure Investment Trends 2020-2024

2020: \$12.5M (baseline)

2021: \$14.2M (growth: +13.6%)

2022: \$16.1M (growth: +13.4%)

2023: \$17.8M (growth: +10.6%)

2024: \$18.5M (growth: +3.9%)

Key Metrics:

3-year CAGR +11.8%

Total km upgraded: 48.2 km (2020-2024)

Bike lane growth: +127% since 2020

Detailed Project Analysis and Performance Metrics

The following sections detail individual projects with contract numbers, completion dates, budget information, and performance metrics relative to historical baselines.

ROAD RESURFACING PROJECTS:

Project #R-2024-001 - Downtown Main Corridor

Contract Number: CNT-2024-RD-00145

Contractor: Atlas Paving Inc.

Start Date: 2024-02-01

Completion: 2024-04-15

Distance: 4.0 km (2023 same district: 3.8 km, increase: +5.3%)

Budget: \$2,450,000.00 (\$612.50/m, 2023 avg: \$589/m, increase: +4.0%)

Timeline: 73 days (2023 avg: 82 days, improvement: -11.0%)

Quality score: 94/100 (2023 avg: 91/100, improvement: +3.3%)

Contact: contracts@atlaspaving.com

Phone: (403) 555-1234

Project #R-2024-002 - Riverside Arterial

Contract: CNT-2024-RD-00289

Contractor: Mountain Roads Ltd.

Timeline: 03/01/2024 - 05/30/2024

Length: 3.5 km (2023: 3.2 km, growth: +9.4%)

Cost: \$1,875,000 (\$535.71/m, 2023 avg: \$589/m, efficiency: -9.0%)

Duration: 90 days (2023 avg: 82 days, variance: +9.8%)

Defect rate: 1.2% (2023 avg: 2.1%, improvement: -42.9%)

Project Manager: John Davis (j.davis@mountainroads.ca)

Cell: 403-555-2345

Office: +1 (403) 555-2346

Project #R-2024-003 - Northgate Residential

Contract ID: CNT-2024-RD-00356

Vendor: Superior Asphalt Services

Duration: 2024/04/15 through 2024/06/30

Coverage: 2.0 km (2023: 2.5 km, reduction: -20.0%)

Expenditure: \$1,200,000 (\$600/m, 2023 avg: \$589/m, increase: +1.9%)

Days to complete: 76 days (2023 avg: 82 days, ahead: -7.3%)

Contact email: info@superiorasphalt.com

Hotline: 1-888-555-ROAD (1-888-555-7623)

Performance trend: Meeting budget and timeline targets consistently

BICYCLE INFRASTRUCTURE PROJECTS:

Project #B-2024-010 - Northgate Bike Network

Contract: CNT-2024-BK-00412

Installer: GreenLane Cycling Infrastructure

Install Date Range: May 1, 2024 to July 15, 2024

New lanes: 3.0 km (2023: 2.8 km, expansion: +7.1%)

Budget: \$450,000.00 (\$150/m, 2023 avg: \$535/m, efficiency: -71.96%)

Construction days: 75 days (target: 80 days, ahead: -6.25%)

Safety rating: 98/100 (2023 district avg: 95/100, improvement: +3.2%)

Coordinator: Sarah Kim

Email: s.kim@greenlane.com

Phone: 403.555.3456

Usage projections: 850 cyclists/day (2023 baseline: 620 cyclists/day, +37.1%)

Project #B-2024-011 - Westfield Community Paths

Contract Number: CNT-2024-BK-00478

Company: Urban Cycling Solutions

Schedule: 2024-06-01 to 2024-08-31

Distance: 3.0 km (2023: 2.1 km, growth: +42.9%)

Total Cost: \$425,000 (\$141.67/m, 2023 avg: \$535/m, efficiency: -73.5%)

Timeline: 91 days (planned: 95 days, performance: -4.2%)

Community satisfaction: 4.7/5.0 (2023: 4.3/5.0, improvement: +9.3%)

Point of Contact: Mike Peterson (m.peterson@urbancycling.ca)

Mobile: +1-403-555-4567

Projected usage: 1,200 cyclists/day (2023 similar routes: 780/day, +53.8%)

Project #B-2024-012 - Oldtown Heritage Trail

Contract: CNT-2024-BK-00501

Installer: Heritage Cycling Group

Period: 2024-07-15 to 2024-09-30

Length: 0.8 km (2023: 0.2 km, expansion: +300%)

Investment: \$95,000 (\$118.75/m, 2023: \$535/m, efficiency: -77.8%)

Heritage compliance rating: 100% (critical for district approval)

Email: heritage@cyclinggroup.ca

Phone: (403) 555-5678

Tourism impact: Expected 15% increase in heritage district visitors

Figure 2: 2024 Quarterly Progress and Completion Rates

2024 Quarterly Completion Rates

Q1 2024: 28% complete (\$5.2M spent)

Q2 2024: 58% complete (\$10.8M spent, +107% QoQ)

Q3 2024: 82% complete (\$15.2M spent, +41% QoQ)

Q4 2024: 94% complete (\$17.4M spent, +14% QoQ)

Efficiency Metrics:

Average completion rate: +24% per quarter

Budget utilization: 94% (target 90%)

Projects ahead of schedule: 67%

Public Transit Improvements and Multi-Year Trends

NEW BUS STOPS WITH PERFORMANCE METRICS:

Stop ID: BS-2024-001

Location: Southridge Community Center

Installation Date: 2024-03-15

Cost: \$425,000 (2023 avg: \$438k, efficiency: -3.0%)

Ridership (first 6 months): 1,250 riders/day

Ridership growth vs. old stop location: +18.5%

Wait time reduction: -4.2 minutes (from 12.8 min to 8.6 min)

Accessibility score: 98/100 (2023 avg: 89/100, improvement: +10.1%)

Phone: (403) 555-5678

Stop ID: BS-2024-002

Location: Southridge Shopping Plaza

Completed: 2024/04/20

Budget: \$398,500 (2023 avg: \$438k, savings: -9.0%)

Daily ridership: 2,100 riders/day (target: 1,800, exceeded: +16.7%)

Commercial area foot traffic increase: +22.3%

Average wait time: 7.8 minutes (2023 district avg: 11.2 min, -30.4%)

Phone: 403-555-6789

User satisfaction: 4.6/5.0 (2023 avg: 4.1/5.0, +12.2%)

Stop ID: BS-2024-003

Location: Oldtown Heritage District

Date: April 25, 2024

Investment: \$385,000 (2023 avg: \$438k, under budget: -12.1%)

Heritage design compliance: 100%

Daily ridership: 850 riders/day

Tourist usage rate: 35% of total riders

GPS: 51.0447° N, 114.0719° W

Contact: heritage@transit.ca or call 403.555.7890

Cultural impact rating: Positive (increased heritage district accessibility)

MULTI-YEAR PUBLIC TRANSIT TREND ANALYSIS:

Total Stops Added (2020-2024):

2020: 4 stops (\$1.5M, \$375k/stop)

2021: 5 stops (\$1.4M, \$280k/stop, count: +25%, cost: -25.3%)

2022: 6 stops (\$2.2M, \$367k/stop, count: +20%, cost: +31.1%)

2023: 8 stops (\$3.5M, \$438k/stop, count: +33%, cost: +19.3%)

2024: 9 stops (\$3.5M, \$389k/stop, count: +12.5%, cost: -11.2%)

5-year total: 32 new stops, \$12.1M invested

Ridership Growth Trends:

2020: 45,200 daily system-wide riders (baseline)

2021: 48,900 daily riders (growth: +8.2%)

2022: 54,300 daily riders (growth: +11.0%)

2023: 61,800 daily riders (growth: +13.8%)

2024: 69,500 daily riders (growth: +12.5%)

5-year CAGR: +11.3%

Total growth: +53.8% since 2020

Service Efficiency Metrics:

Average wait time reduction: -32.5% (from 12.1 min in 2020 to 8.2 min in 2024)

On-time performance: 89.2% (2020: 81.5%, improvement: +9.4%)

Service coverage area: +28.5% expansion since 2020
Cost per rider: \$2.85 (2020: \$3.42, efficiency: -16.7%)
Customer satisfaction: 4.5/5.0 (2020: 3.8/5.0, improvement: +18.4%)

Investment ROI Analysis:

Total 5-year investment: \$12.1M
Annual ridership increase: 24,300 new daily riders
Cost per new daily rider: \$498
Estimated economic impact: \$45M in reduced traffic congestion
Environmental benefit: 8,200 tons CO2 reduction annually

Comprehensive Infrastructure Trend Summary (2020-2024)

OVERALL INFRASTRUCTURE DEVELOPMENT PATTERNS:

Total Investment Trajectory:

5-year total: \$79.1M invested in infrastructure
Annual CAGR: +11.8%
Investment efficiency improving: Cost per unit declining in bike lanes (-73% avg) and transit
2024 growth slowdown: +3.9% vs. historical average of +13.0%, indicating market maturation

District-Level Investment Patterns:

High-investment districts:

- D01 Downtown: Consistent 5-10% YoY increases, focus on road quality
- D03 Northgate: Bike infrastructure leader (+7.1% growth in 2024)
- D05 Westfield: Explosive bike lane growth (+42.9% YoY), emerging cycling hub

Declining-investment districts:

- D04 Southridge: Road upgrades down -44.4%, bike lanes down -20.0%
- D06 Oldtown: Inconsistent data (NULL for roads), but dramatic bike growth (+300%)

Project Efficiency Trends:

Timeline performance: Projects completing 7-11% faster than 2023 average
Cost efficiency: Bike lane costs down -73% on average, indicating economies of scale
Quality scores: Averaging 94-98/100, up from 89-91/100 in 2023 (+5.5% improvement)
Defect rates: Down 42.9% YoY in road projects

Usage and Impact Metrics:

Bike lane usage: Projected 37-54% increases in daily cyclists
Transit ridership: +12.5% YoY growth, sustaining multi-year trend
Wait time reductions: -30 to -32% improvements at new stops
Community satisfaction: Up 9-12% across all project types

2025 PROJECTIONS:

Based on 5-year trend analysis:
Projected total investment: \$19.2M - \$20.1M (growth: +4-9%)
Road resurfacing: 12.8-13.5 km (flat to +8% growth)
Bike lanes: 9.5-10.2 km (growth: +16-24%, continuing expansion)
Transit stops: 10-11 new stops (growth: +11-22%)
System-wide ridership: 76,000-78,000 daily riders (growth: +9-12%)

Strategic Recommendations Based on Trends:

1. Sustain bike infrastructure expansion (strongest growth sector, +127% since 2020)
2. Address Southridge declining investments (down -44% roads, -20% bike)
3. Standardize Oldtown data collection (NULL values limiting analysis)
4. Leverage cost efficiencies in bike lanes (73% cost reduction achieved)

5. Maintain transit ridership growth momentum (+11.3% CAGR)

Classification: PUBLIC

Reference: INFRA-TRANS-2024-FINAL

MD5 Hash: d41d8cd98f00b204e9800998ecf8427e

Created: 2024-11-20 16:45:30 MST

Version: 2.1

Trend analysis methodology: YoY comparison, CAGR calculation, linear regression, efficiency ratios

Data confidence: 97% (excluding NULL values in D06 road data)

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