

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)

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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@atlas paving.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



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

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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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