Alberta Municipal Benchmarking Initiative – Transit

May 2018

Table of Contents

1 Introduction and Background

1.1 Introduction

Today's municipalities are challenged by an ever-increasing demand to deliver a greater variety and a higher level of public services while maintaining low taxes and user fees.

To meet this challenge, municipal governments are continually looking for new ways to improve performance, operationally and fiscally.

In the spring of 2012, a number of municipalities in Alberta expressed an interest in benchmarking their service delivery against leading practices as a way to improve service. At a workshop hosted by the Town of Banff in May 2012, participating municipalities discussed the benefits of benchmarking; developed a preliminary list of guiding principles; and identified considerations related to governance, scope, data collection, resources, and risks.

Subsequent to this workshop, the Town of Banff, on behalf of a group of 13 municipalities, successfully applied to the provincial government for a Regional Collaboration Grant to fund the development of a municipal service delivery benchmarking framework. With the support of the provincial government, the Alberta Municipal Benchmarking Initiative (ABMI) was launched in 2013.

1.2 Background

The Alberta Municipal Benchmarking Initiative is a collaboration of small and large municipalities. Their objective is to develop and implement a framework that will enable a continuous, multi-year benchmarking process for participating municipalities. The initiative includes identifying and gathering comparable metrics and preparing benchmarking reports to prompt questions, start discussions, identify and share leading practices, and ultimately improve the municipal services provided to Albertans.

The ten service areas to be considered as part of this initiative are:

1. Drinking Water Supply (complete)
2. Wastewater Collection, Treatment and Disposal (complete)
3. Fire Protection (complete)
4. Residential Solid Waste Management (complete)
5. Police Protection, RCMP (complete) and Self-Run (complete)
6. Roadway Operations and Maintenance (complete)
7. Snow and Ice Management (complete)
8. Transit
9. Parks Provision and Maintenance
10. Recreation, Facility Booking and Maintenance

A method for collecting data to ensure it is comparable between communities and a database to hold the data and produce performance measure has been developed. The foundation of this method is a "User Manual" for each service area, containing:

- Definitions for cost and service data, and
- Definitions for the calculations of performance measures, for both efficiency and effectiveness.

To ensure an "apples to apples" comparison, participating municipalities work to agree on the content of the user manual.

1.3 Participating Municipalities

The municipalities currently participating in the Transit section of the Project are the cities of Lethbridge, Medicine Hat and the Town of Banff.

1.4 Governance Structure

To guide and drive the project, a model has been developed consisting of:

- A governance committee consisting of six municipal leaders
- A working committee with representatives from each of the participating municipalities
- A finance group with representatives from each of the participating municipalities
- A subject matter expert (SME) Group for each service area with representatives from each of the participating municipalities

Governance Committee - The governance committee was created to provide overall guidance and oversight, and to ensure that the work conducted is in the best interest of the group of municipalities as a whole as opposed to an individual municipality. The committee is: Robert Earl (Chair), Town of Banff, Lisa de Soto, Town of Canmore, Corey Wight, City of Lethbridge, Brian Mastel, City of Medicine Hat and two vacant positions.

Working Committee - Each of the participating municipalities is represented on the working committee. Its members' primary role is liaising between the project manager and the respective municipality. They oversee the completion of activities within the municipality, support the identification of SMEs needed for the development of the Database User Manual, and assist with the gathering of relevant data.

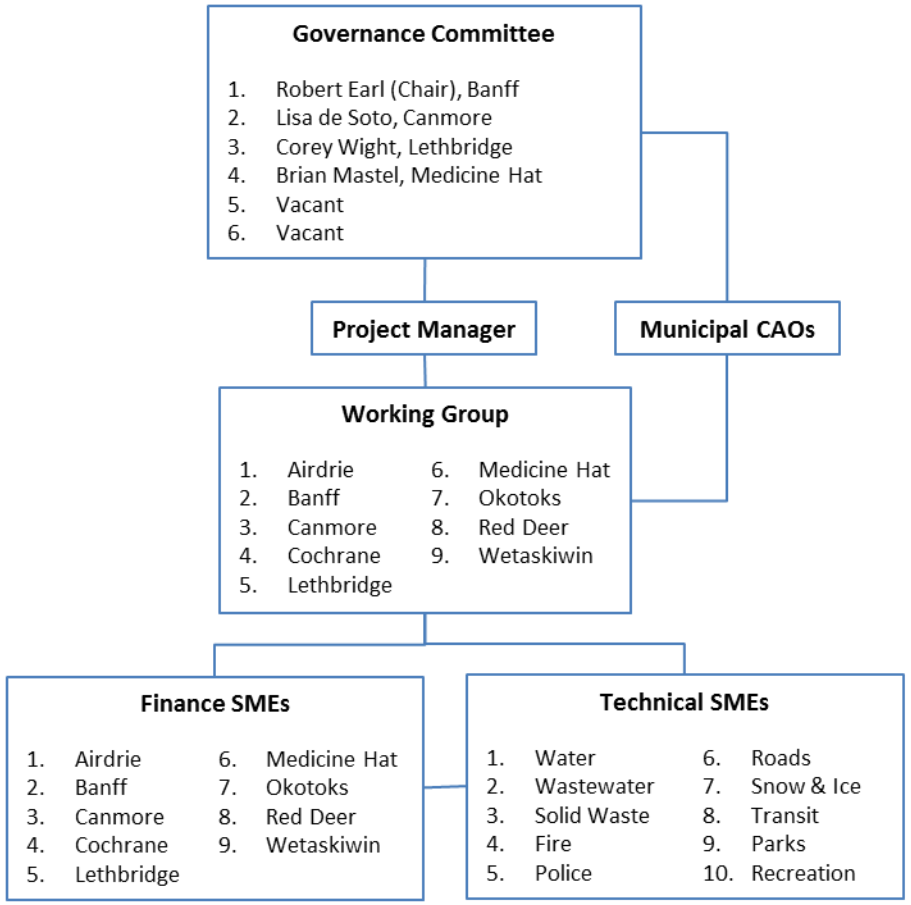
Finance Group – The primary role and responsibility of the Finance Group is to collect and enter data for a calculation to allocate overhead to each service area, collect and enter data for amortization of assets in each service area, and assist service area SMEs on collection of cost data for each service

area. The Finance Group also ensures all data is accurate by confirming the financial data to the municipality's non-consolidated financial statements.

Subject Matter Expert Group (SME) – The primary role and responsibility of the SME groups is to provide subject matter expertise in the development of the service definitions, performance measures, and collection of data for the benchmarking pilot project.

The CAOs' Role – In addition to the governance committee, the CAOs from each of the participating municipalities were asked to confirm their commitment to this project, to be the executive sponsor for their respective municipality, to champion this pilot project within their municipality, and ensure that all participating municipalities are informed of the activities and outcomes.

Governance Structure



1.5 Benefits of Benchmarking

The anticipated benefits from this benchmarking project are:

- Helps tell the municipal "performance story"
- A sound business practice used in the government and private sectors
- Sets the stage for sharing knowledge and best practices among the municipal sector
- Understanding of trends within each municipality
- Identification of opportunities for change to improve efficiency or effectiveness of municipal services
- Formation of objective evidence that shows the differentiation between municipalities and provides information for Municipal CAOs to address questions from Council, staff, and the community on service efficiency and effectiveness
- Encouragement of continuous improvement initiatives and a better understanding of the drivers that impact performance results
- Encourages continuous improvement, and
- Awareness of the value of collaboration between municipalities.
- Supports results-based accountability

1.6 Definitions

Efficiency – Efficiency is a measure of productivity based on dividing the quantity of output (measured in units of deliverables) by the quantity of resources input (usually measured in person hours or dollars).

Effectiveness – Effectiveness is a measure of the value or performance of a service relative to a goal, expressed as the actual change in the service. An effectiveness measure compares the output of a service to its intended contribution to a higher level goal.

Alberta Municipal Benchmarking Initiative – Transit Services

May 2018

2 Transit Services

2.1 System Description

2.1.1 Transit Services

Transit services are defined as a public passenger transportation system that provides citizens with a safe, reliable, efficient and affordable way of traveling to local locations in the municipality, e.g. work, school, shopping, health care, special events, and to locations in the municipalities region.

There are three types of service;

1. **Local Transit**- public transit along specific routes for set hours
2. **Specialized Services Transit** – Small transit vehicles available to qualified riders on request
3. **Regional Transit** – Service that travels to and from the municipality beyond the municipal boundaries

2.1.2 Factors Influencing Transit Services

Age of Infrastructure: Age and condition of transit system assets and frequency of maintenance costs.

Size of System: Size and complexity of the transit system.

Urban Density: Denser population may lower collection costs for the transit system.

Urban Growth: High growth municipalities have newer infrastructure with higher amortization (depreciation) costs.

2.1.3 Who provides what service?

Municipality	Local	Specialized	Regional
Banff	√		√
Lethbridge	√	√	
Medicine Hat	√	√	

For this Report, the operations and finance SMEs (Subject Matter Experts) concluded regional transit operations are very different in each municipality and therefore difficult to compare. The group decided not to benchmark regional transit services at this time. The definitions for regional data remain in the Definitions Manual for use in the future.

2.1.4 Transit System Narrative Data (See Section 3 for definitions of each column heading)

The narrative data shows differences and similarities between municipalities for this service area.

Part 1

Municipality	Year	Total Service Hours (#)	Total Buses (#)	Total Bus Stops (#)	Bus Stop Shelters (#)	Bus Stop Spacing (meters)	Walking Distance to Bus Stops (meters)	Coverage, Population Within Walking Distance of Stops (%)	Average Speed of Buses (km/h)
Banff	2012	13,722	4	34	0	250	400	95%	25.0
	2013	13,722	8	34	0	250	400	95%	25.0
	2014	13,722	8	34	0	250	400	95%	25.0
Lethbridge	2012	106,510	42	530	77	250	400	95%	24.0
	2013	106,668	42	530	77	250	400	95%	24.0
	2014	106,729	42	530	77	250	400	95%	24.0
Medicine Hat	2012	56,162	24	272	41	0	400	90%	0.0
	2013	56,162	21	272	41	0	400	90%	0.0
	2014	56,162	26	272	41	0	400	90%	0.0

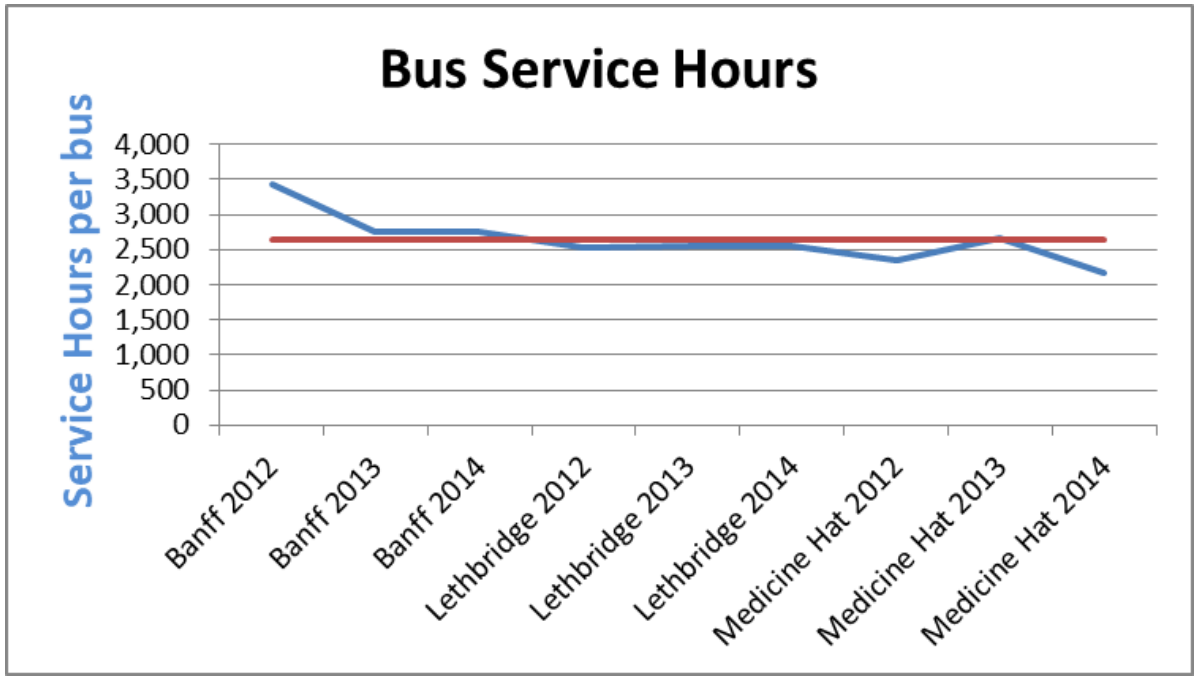
NOTES:

1. Medicine Hat does not use a standard distance for spacing bus stops at this time. The bus stops are placed according to rider demand.

2. Medicine Hat does not measure average bus speed at this time.

2.1.5 Lessons Learned

1. All municipalities are close to the average for service hours per bus in operation (see chart below). The average is 2,635 hours per bus (red line on chart).


Bus Service Hours
Service Hours per bus
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Banff 2012
Banff 2013
Banff 2014
Lethbridge 2012
Lethbridge 2013
Lethbridge 2014
Medicine Hat 2012
Medicine Hat 2013
Medicine Hat 2014

Part 2

Municipality	Year	Fare Model	Vehicle Tracking 1	Vehicle Tracking 2	Vehicle Tracking Next Bus Display	Loading Standard (%)	Bus Frequency Local-Frequent (minutes)	Bus Frequency Local Other (minutes)	Bus Frequency Community (minutes)
Banff	2012	Electronic	Active	GPS	Yes	140	40	40	0
	2013	Electronic	Active	GPS	Yes	140	40	40	60
	2014	Electronic	Active	GPS	Yes	140	30	40	60
Lethbridge	2012	Electronic	Passive	GPS	No	150	15	30	30
	2013	Electronic	Passive	GPS	No	150	15	30	30
	2014	Electronic	Active	GPS	Yes	150	15	30	30
Medicine Hat	2012	Manual	Passive	Cellular	No	150	30	30	30
	2013	Manual	Passive	Cellular	No	150	30	30	30
	2014	Manual	Passive	Cellular	No	150	30	30	30

NOTES:

1. Active vehicle tracking involves a system to determine bus locations at any time.

2. Passive vehicle tracking is limited to a daily tracking download showing bus locations including when there is a bus "incident".

3. Lethbridge implemented active vehicle tracking in 2014.

4. Lethbridge has limited "Next Bus" electronic displays for vehicle tracking. The displays are only at stops in the municipal downtown area.

5. Loading standard is the percent of maximum seating capacity allowed in the bus. Greater than 100% means riders are allowed to stand.

6. Banff and Lethbridge offer a "transit app" for riders to plan trips. Medicine Hat will have an app in 2018.

Part 3

Municipality	Year	Municipal Population (#)	Visitor Adjusted Population (VAP) (#)	Population Served (#)	Non-Permanent Population (#)	Students (#)	Demographics Child 0-15 (#)	Demographics Adult 16-65 (#)	Demographics Senior 65+ (#)
Banff	2012	8,244	24,118	0	0	0	0	0	0
	2013	7,584	23,963	0	0	0	0	0	0
	2014	8,421	26,698	0	0	0	0	0	0
Lethbridge	2012	89,074	0	89,074	10,796	18,578	14,233	61,910	12,931
	2013	90,417	0	90,417	10,814	18,467	14,646	62,446	13,325
	2014	93,004	0	93,004	10,378	17,545	15,209	64,051	13,744
Medicine Hat	2012	61,180	0	66,680	342	3,666	10,822	40,668	9,690
	2013	61,180	0	66,680	328	3,572	10,822	40,668	9,690
	2014	61,180	0	66,680	337	3,572	10,822	40,668	9,690

NOTES:

1. VAP applies to tourist centred municipalities and includes permanent population + a count of visitors to the municipality, e.g. Banff. VAP is used when services are designed to serve a significant visitor population in addition to the municipal permanent population.

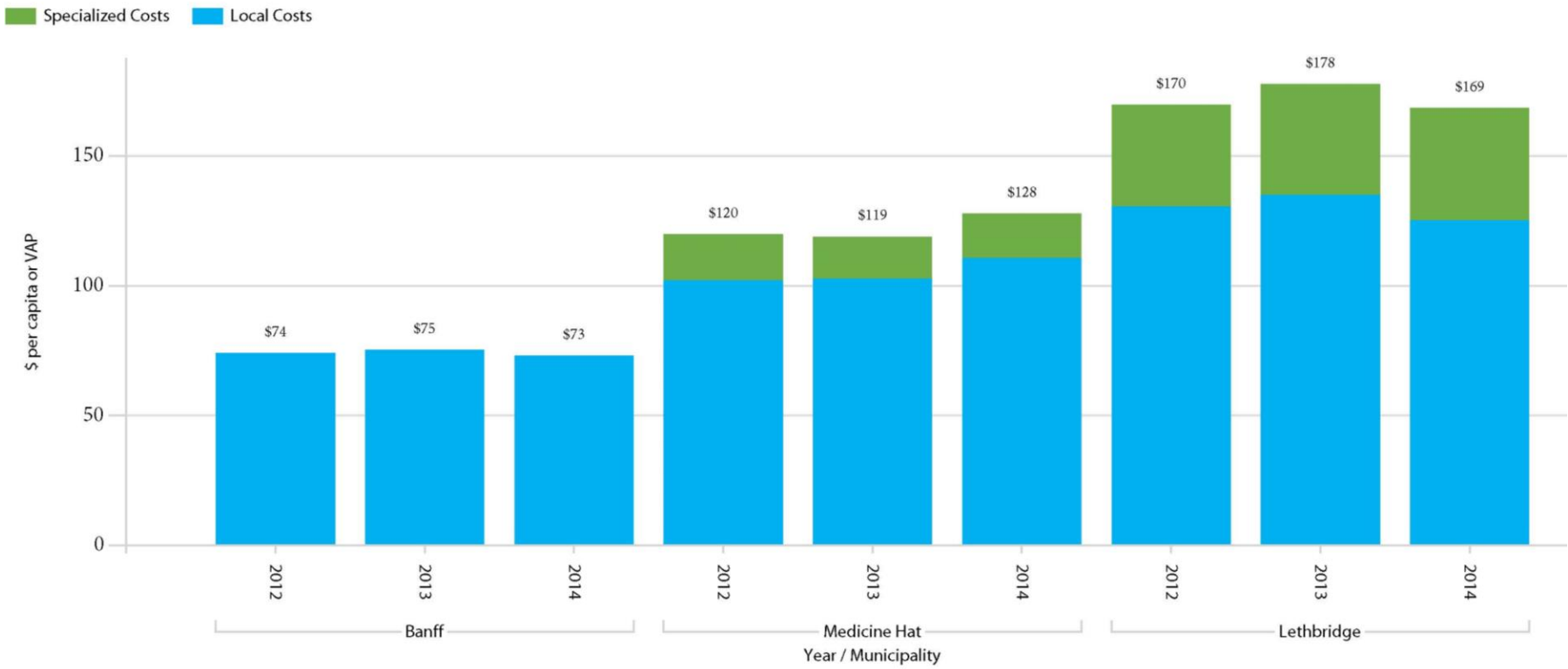
2. Population served includes the population of adjacent regions served by transit beyond the municipal boundaries, e.g. Medicine Hat provides specialized transit to 5,500 people in an adjacent community.

3. Non-permanent population may be used by municipalities when planning services; it is an unofficial count of people who reside occasionally but whose primary residence is elsewhere, e.g. students, seasonal/temporary workers and 2nd home owners.

4. Banff will begin collecting demographics data in 2015.

2.2 Transit Total Costs 1 ($/capita or VAP) – Efficiency

This chart shows the total cost of providing local and specialized transit services per capita or VAP. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.2.1 Total Transit Data (See Section 3 for definitions of each column heading)

Municipality	Year	Local Costs ($)	Specialized Services Costs ($)	Total Costs ($)	Municipal Population or VAP (#)	Cost per Capita or VAP ($)
Banff	2012	$1,789,638	$0	$1,789,638	24,118	$74
	2013	$1,806,759	$0	$1,806,759	23,963	$75
	2014	$1,951,947	$0	$1,951,947	26,698	$73
Lethbridge	2012	$11,627,913	$3,498,247	$15,126,161	89,074	$170
	2013	$12,208,667	$3,868,769	$16,077,435	90,417	$178
	2014	$11,644,642	$4,043,459	$15,688,101	93,004	$169
Medicine Hat	2012	$6,246,089	$1,090,763	$7,336,852	61,180	$120
	2013	$6,294,025	$989,379	$7,283,404	61,180	$119
	2014	$6,772,080	$1,052,388	$7,824,467	61,180	$128

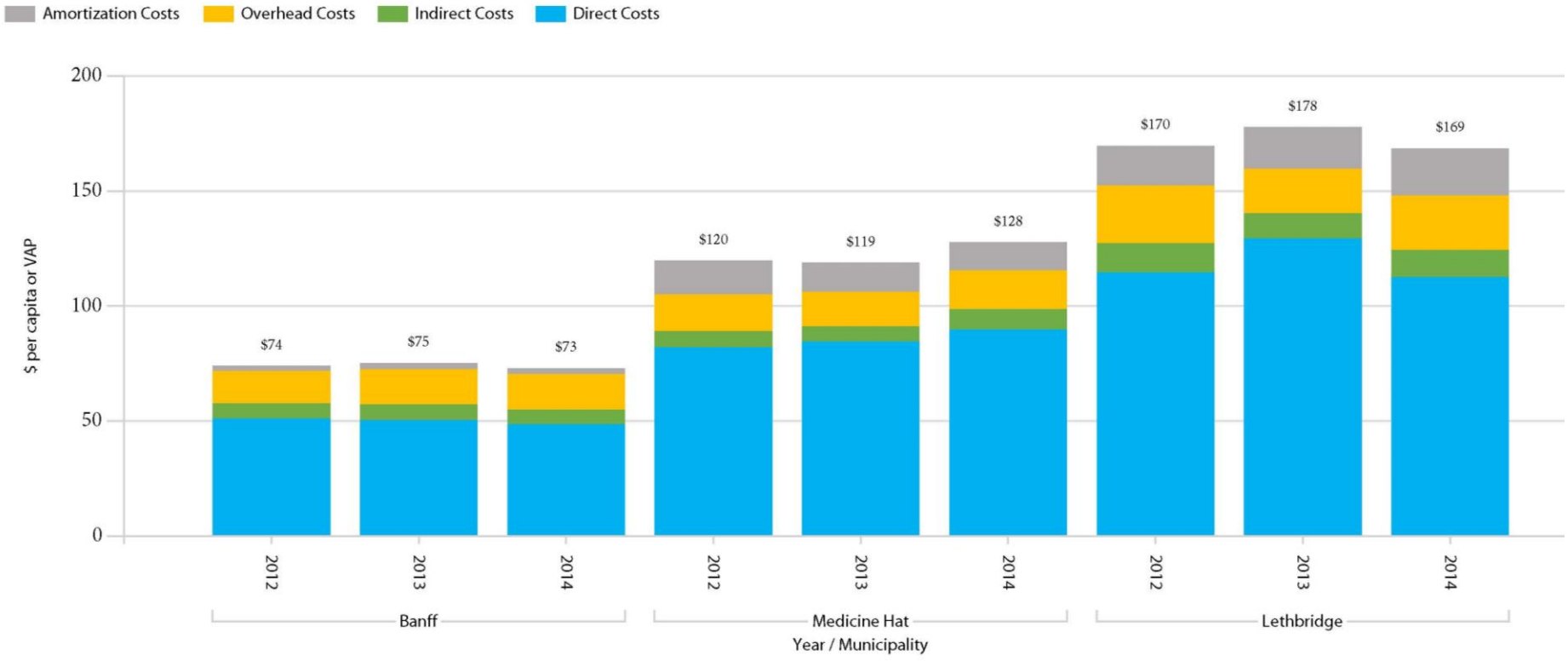
* VAP is Visitor Adjusted Population

2.2.2 Lessons Learned

1. The overall average cost per capita or VAP for a transit system is $123. The range is from $73 per capita or VAP (Banff 2013) to $178 (Lethbridge 2013).

2.3 Transit Total Costs 2 ($/capita or VAP) – Efficiency

This chart shows the total cost of providing local and specialized transit services per capita or VAP of providing local transit within the municipal boundaries; direct costs are for day-to-day operation of the service, indirect costs are for management of the service, overhead is a calculated allocation of total overhead to this service, amortization is the depreciation cost of all assets used to deliver the service. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.3.1 Total Transit Data (See Section 3 for definitions of each column heading)

Municipality	Year	Direct Costs ($)	Indirect Costs ($)	Overhead Costs ($)	Amortization Costs ($)	Total Costs ($)	Municipal Population or VAP (#)	Cost per Capita or VAP ($)
Banff	2012	$1,235,981	$158,539	$337,715	$57,403	$1,789,638	24,118	$74
	2013	$1,208,000	$165,000	$366,356	$67,403	$1,806,759	23,963	$75
	2014	$1,299,295	$170,000	$415,249	$67,403	$1,951,947	26,698	$73
Lethbridge	2012	$10,210,301	$1,129,932	$2,228,587	$1,557,341	$15,126,161	89,074	$170
	2013	$11,711,418	$984,151	$1,737,504	$1,644,362	$16,077,435	90,417	$178
	2014	$10,482,019	$1,100,971	$2,201,297	$1,903,814	$15,688,101	93,004	$169
Medicine Hat	2012	$5,027,073	$431,046	$967,688	$911,045	$7,336,852	61,180	$120
	2013	$5,184,123	$391,965	$917,634	$789,682	$7,283,404	61,180	$119
	2014	$5,494,154	$545,772	$1,032,296	$752,245	$7,824,467	61,180	$128

* VAP is Visitor Adjusted Population

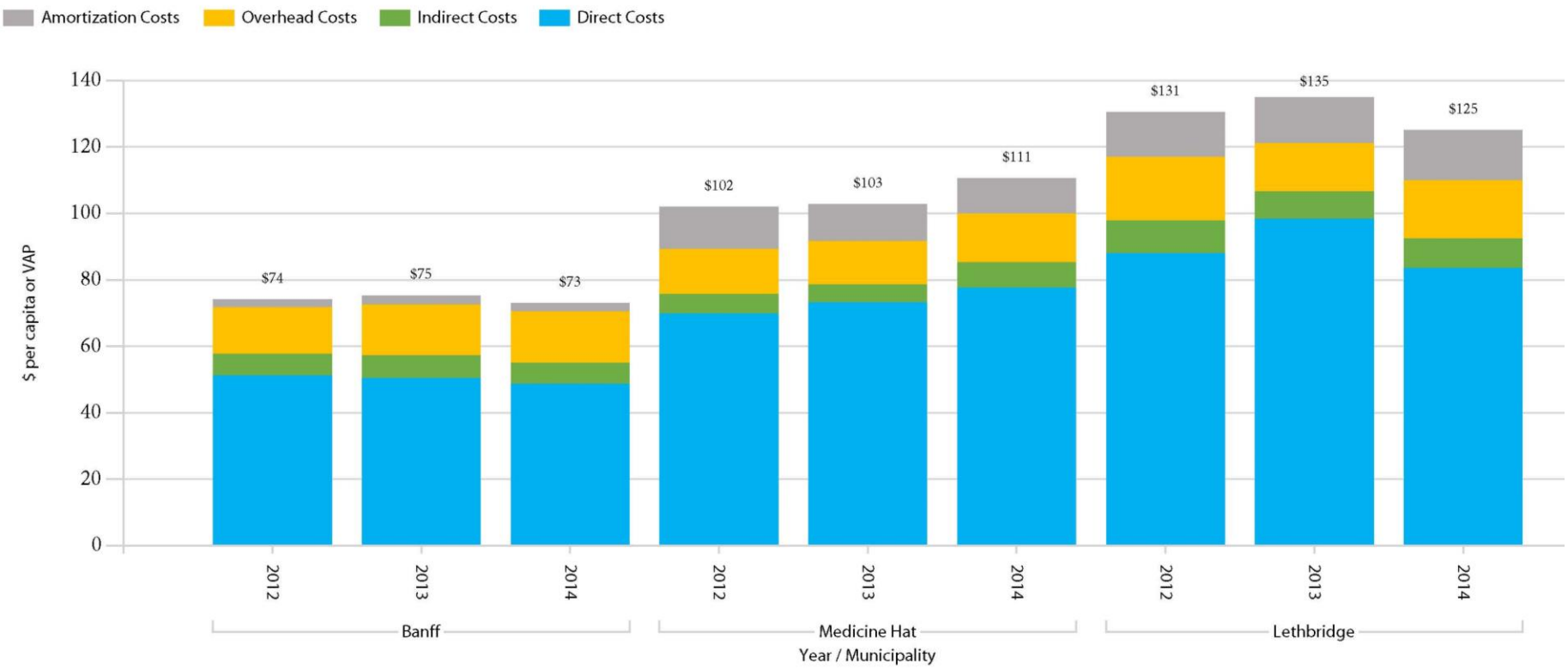
2.3.2 Lessons Learned

1. The overall average cost per capita or VAP for a transit system is $123. The range is from $73 per capita or VAP (Banff 2013) to $178 (Lethbridge 2013).

2. The majority of the cost for transit services is the direct costs to provide the service followed by overhead and amortization costs.

2.4 Local Transit Costs ($/capita or VAP)

This chart shows the total cost per capita or VAP of providing local transit by cost type; direct, indirect, overhead and amortization. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.4.1 Local Transit Data (See Section 3 for definitions of each column heading)

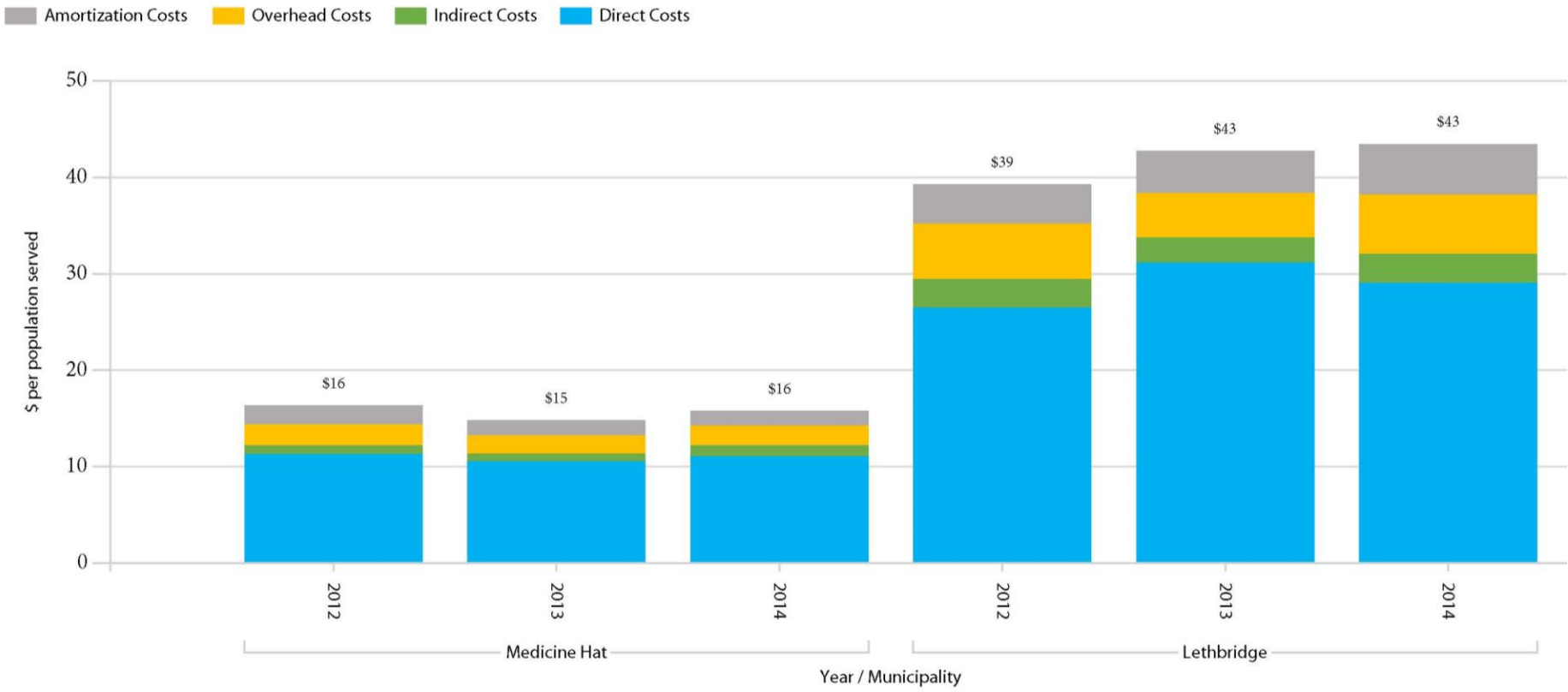
Municipality	Year	Direct Costs ($)	Indirect Costs ($)	Overhead Costs ($)	Amortization Costs ($)	Total Costs ($)	Municipal Population or VAP (#)	Cost per Capita or VAP ($)
Banff	2012	$1,235,981	$158,539	$337,715	$57,403	$1,789,638	24,118	$74
	2013	$1,208,000	$165,000	$366,356	$67,403	$1,806,759	23,963	$75
	2014	$1,299,295	$170,000	$415,249	$67,403	$1,951,947	26,698	$73
Lethbridge	2012	$7,848,951	$868,611	$1,713,179	$1,197,173	$11,627,913	89,074	$131
	2013	$8,893,259	$747,331	$1,319,403	$1,248,673	$12,208,667	90,417	$135
	2014	$7,780,378	$817,206	$1,633,933	$1,413,124	$11,644,642	93,004	$125
Medicine Hat	2012	$4,273,960	$368,035	$826,228	$777,866	$6,246,089	61,180	$102
	2013	$4,478,398	$339,003	$793,644	$682,980	$6,294,025	61,180	$103
	2014	$4,753,422	$472,781	$894,237	$651,640	$6,772,080	61,180	$111

2.4.2 Lessons learned

1. The overall average cost per capita or visitor adjusted population (VAP) for the local component of the transit system is $103. The range is from $73 per capita or VAP (Banff 2012) to $135 (Lethbridge 2013).

2.5 Specialized Services Transit Costs ($/population served)

This chart shows the total cost per population served of providing specialized services transit locally and to municipalities adjacent to the municipal boundaries (population served) by cost type; direct, indirect, overhead and amortization. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.5.1 Specialized Services Transit Data (See Section 3 for definitions of each column heading)

Municipality	Year	Direct Costs ($)	Indirect Costs ($)	Overhead Costs ($)	Amortization Costs ($)	Total Costs ($)	Population Served (#)	Cost per Population Served ($)
Lethbridge	2012	$2,361,350	$261,321	$515,408	$360,168	$3,498,247	89,074	$39
	2013	$2,818,159	$236,820	$418,102	$395,689	$3,868,769	90,417	$43
	2014	$2,701,641	$283,765	$567,363	$490,690	$4,043,459	93,004	$43
Medicine Hat	2012	$753,113	$63,011	$141,459	$133,179	$1,090,763	66,680	$16
	2013	$705,725	$52,962	$123,990	$106,702	$989,379	66,680	$15
	2014	$740,732	$72,991	$138,059	$100,605	$1,052,388	66,680	$16

NOTES:

1. Banff does not offer specialized services transit at this time.

2. Medicine Hat and Lethbridge have similar screening systems to qualify riders for access to specialized transit.

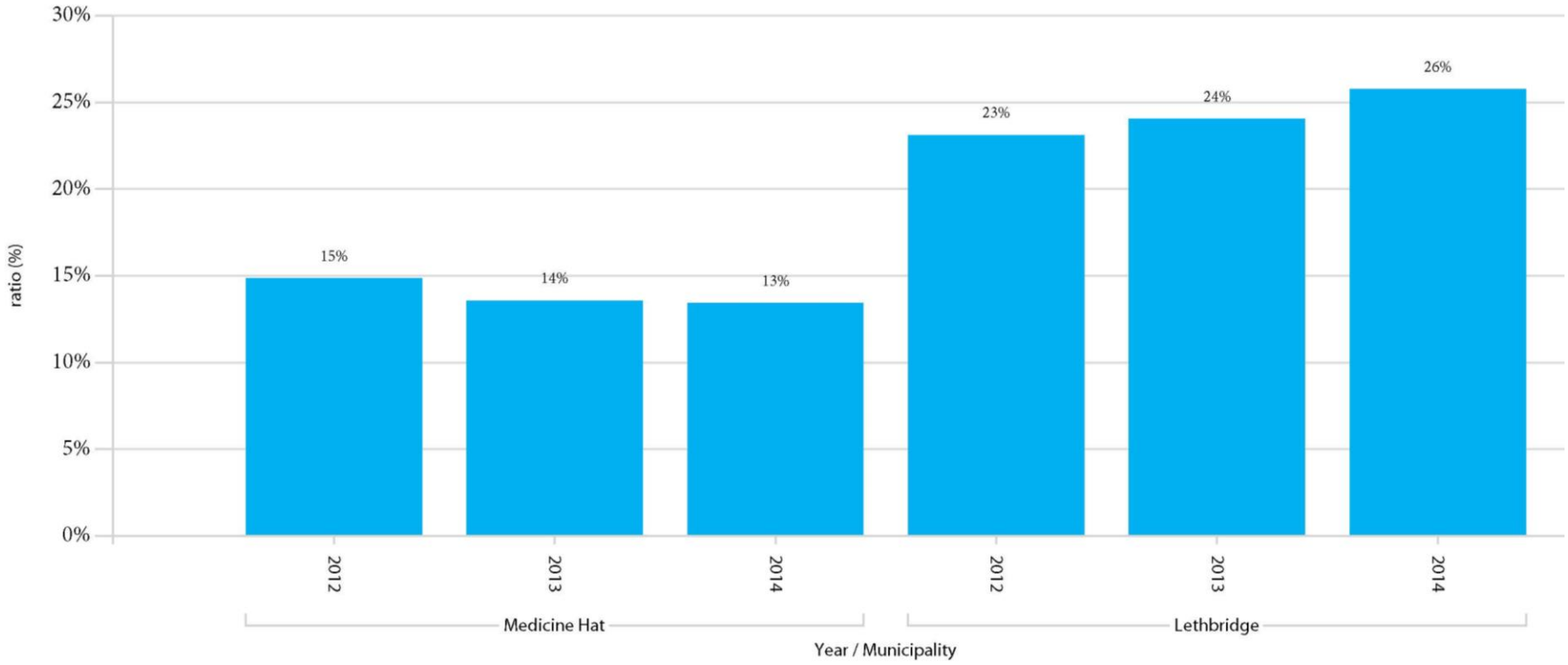
3. As of 2014, Medicine Hat has 9 buses for specialized service and Lethbridge has 25.

2.5.2 Lessons learned

1. The overall average cost is $29 per population served for the municipalities offering the specialized services component of the transit system. The range is from $15 per population served (Medicine Hat 2013) to $43 (Lethbridge 2013, 2014).

2.6 Specialized Services Cost vs. Total Transit Cost (%) - Efficiency

This chart shows the ratio of specialized transit costs to total transit costs (local + specialized). Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.6.1 Specialized Services Data (See Section 3 for definitions of each column heading)

Municipality	Year	Specialized Services Cost ($)	Total Transit Costs ($)	Ratio (%)
Lethbridge	2012	$3,498,247	$15,126,161	23%
	2013	$3,868,769	$16,077,435	24%
	2014	$4,043,459	$15,688,101	26%
Medicine Hat	2012	$1,090,763	$7,336,852	15%
	2013	$989,379	$7,283,404	14%
	2014	$1,052,388	$7,824,467	13%

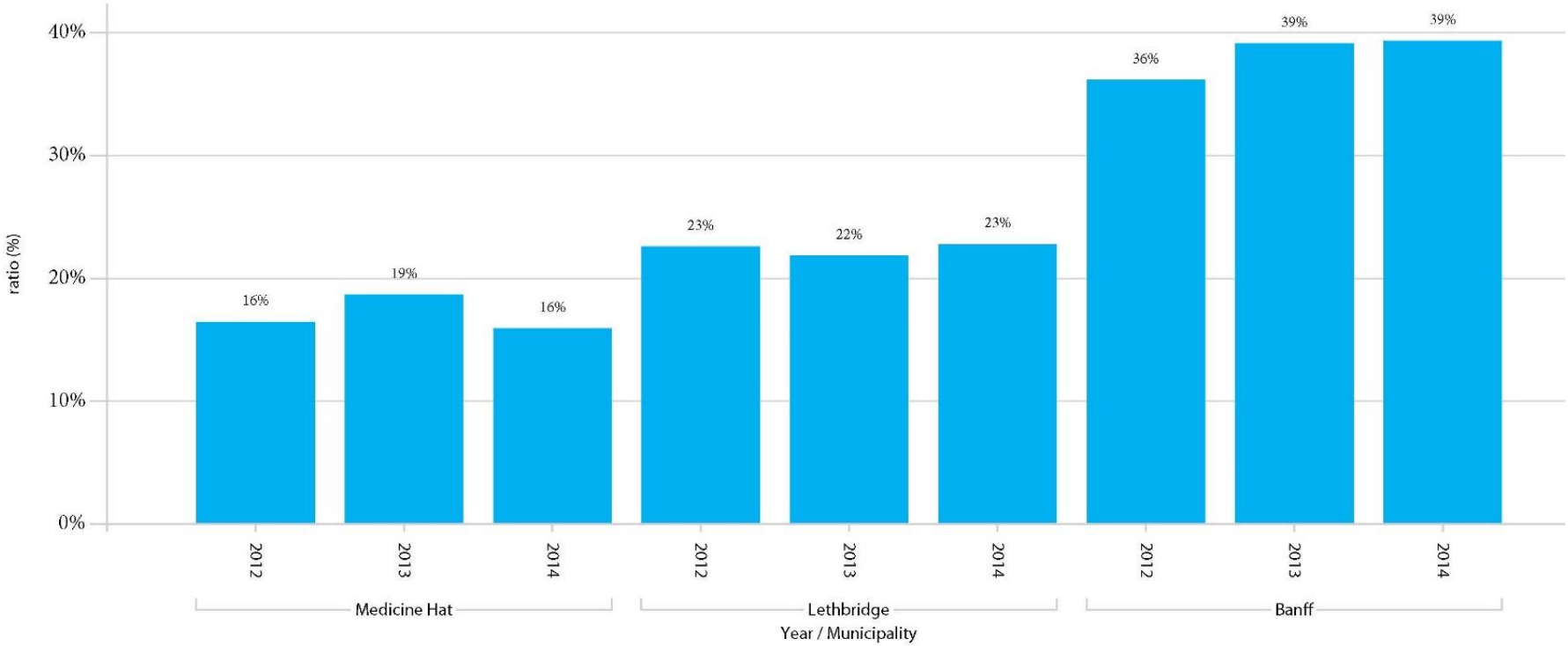
2.6.2 Lessons Learned

1. The cost to provide specialized service transit is on average 19% of total transit costs. The range is from 13% (Medicine Hat 2014) to 26% (Lethbridge 2014).

2. The amount spent on specialized services transit depends on;
    - Council decisions on service level
    - External factors,
        i. Higher seniors population needing the service
        ii. Senior centres having private vehicles for their own transit
        iii. Size of groups on trips, e.g. Lethbridge will take groups of 4 – 6. Medicine Hat limits group size to 2

2.7 Local Transit Cost Recovery, Revenue to Total Costs Ratio (%) – Efficiency

This chart shows the level of local costs recovered by revenue from fares, as a percentage of total costs to provide the service. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.7.1 Local Cost Recovery Data (See Section 3 for definitions of each column heading)

Municipality	Year	Revenue, Local Transit ($)	Total Costs, Local Transit ($)	Ratio (%)
Banff	2012	$647,653	$1,789,638	36%
	2013	$707,300	$1,806,759	39%
	2014	$768,394	$1,951,947	39%
Lethbridge	2012	$2,626,217	$11,627,913	23%
	2013	$2,670,024	$12,208,667	22%
	2014	$2,654,088	$11,644,642	23%
Medicine Hat	2012	$1,029,169	$6,246,089	16%
	2013	$1,176,200	$6,294,025	19%
	2014	$1,078,088	$6,772,080	16%

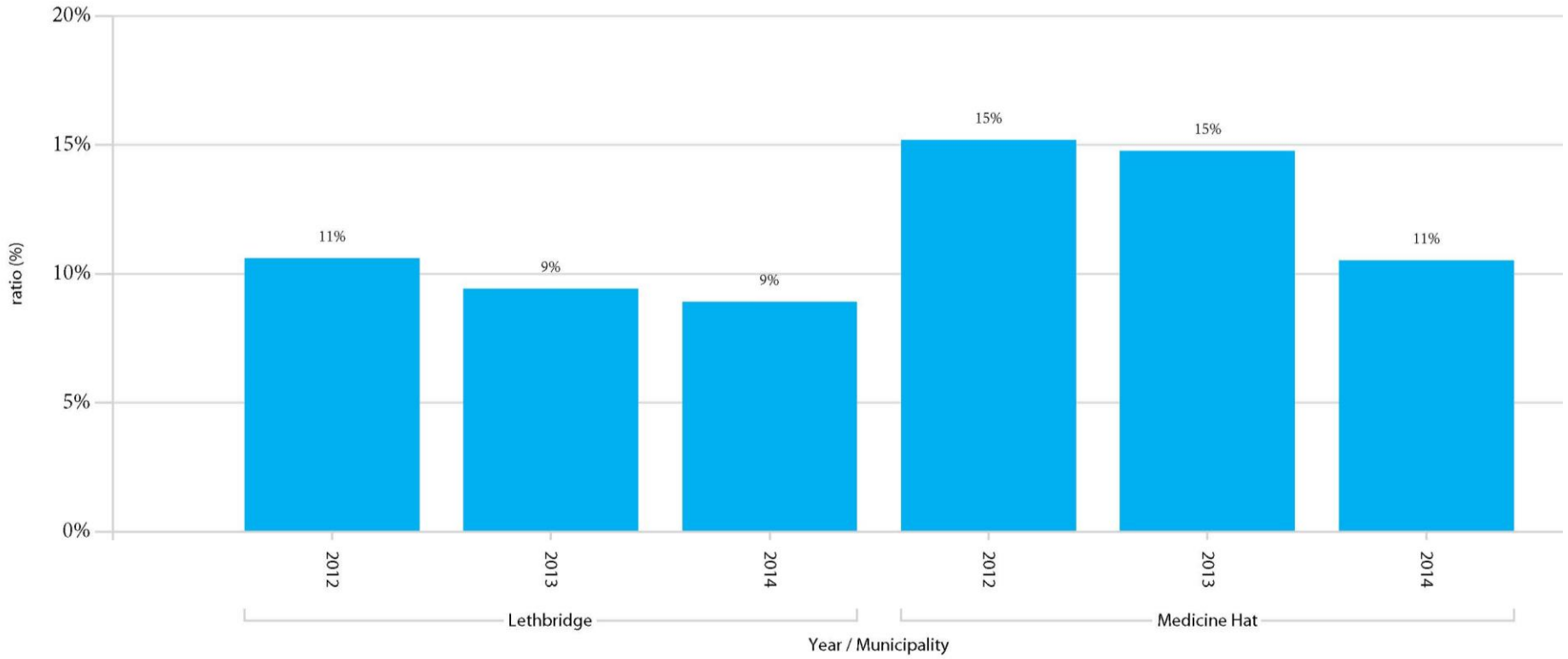
2.7.2 Lessons Learned

1. The overall average revenue to costs ratio is 26% for local transit. The range is from 16% (Medicine Hat 2012, 2014) to 39% (Banff 2013, 2014).

2. Banff has the highest cost recovery due to the large number of visitors using local transit.

2.8 Specialized Services Cost Recovery, Revenue to Costs Ratio (%) – Efficiency

This chart shows the level of specialized services transit costs recovered by revenue from fares, as a percentage of total costs to provide the service. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.8.1 Specialized Cost Recovery Data (See Section 3 for definitions of each column heading)

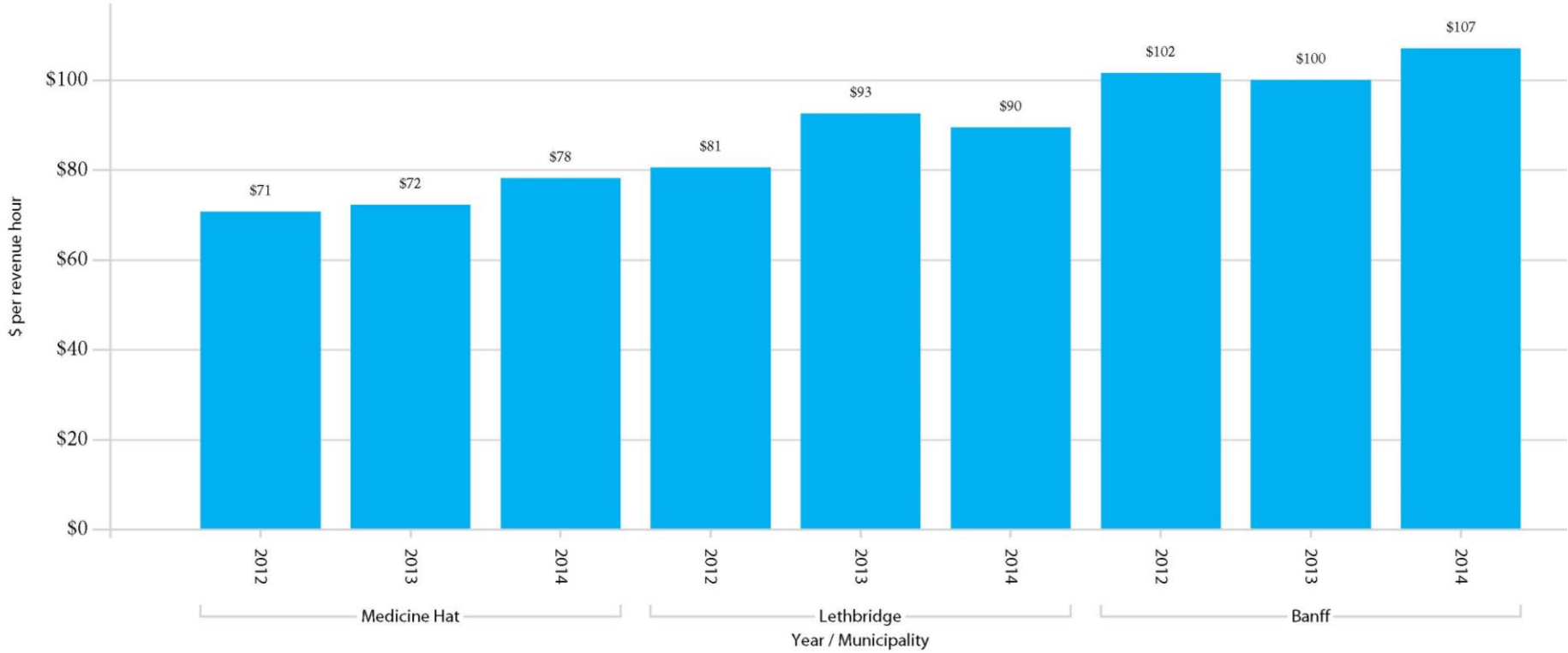
Municipality	Year	Revenue, Specialized Transit ($)	Total Costs, Specialized Transit ($)	Ratio (%)
Lethbridge	2012	$370,997	$3,498,247	11%
	2013	$364,474	$3,868,769	9%
	2014	$360,485	$4,043,459	9%
Medicine Hat	2012	$165,841	$1,090,763	15%
	2013	$146,256	$989,379	15%
	2014	$110,828	$1,052,388	11%

2.8.2 Lessons Learned

1. The overall average revenue to costs ratio is 12% for the specialized services transit components. The range is from 9% (Lethbridge 2013, 2014) to 15% (Medicine Hat 2012, 2013).

2.9 Operating Expense ($/revenue hour) – Efficiency

This chart shows the operating costs (direct and indirect costs) of providing local and specialized services transit per total revenue hour. Municipalities are in order from lowest to highest cost based on the average of 2012, 2013, 2014 results.



2.9.1 Operating Expense Data (See Section 3 for definitions of each column heading)

Municipality	Year	Operating Expense ($)	Revenue Hours (#)	Cost per Hour ($)
Banff	2012	$1,394,520	13,722	$102
	2013	$1,373,000	13,722	$100
	2014	$1,469,295	13,722	$107
Lethbridge	2012	$11,340,233	140,672	$81
	2013	$12,695,569	137,012	$93
	2014	$11,582,990	129,338	$90
Medicine Hat	2012	$5,458,119	77,168	$71
	2013	$5,576,088	77,168	$72
	2014	$6,039,926	77,168	$78

NOTES:

1. Operating expense is the sum of direct costs (to provide the service) and indirect costs (to manage the service) for local plus specialized transit.

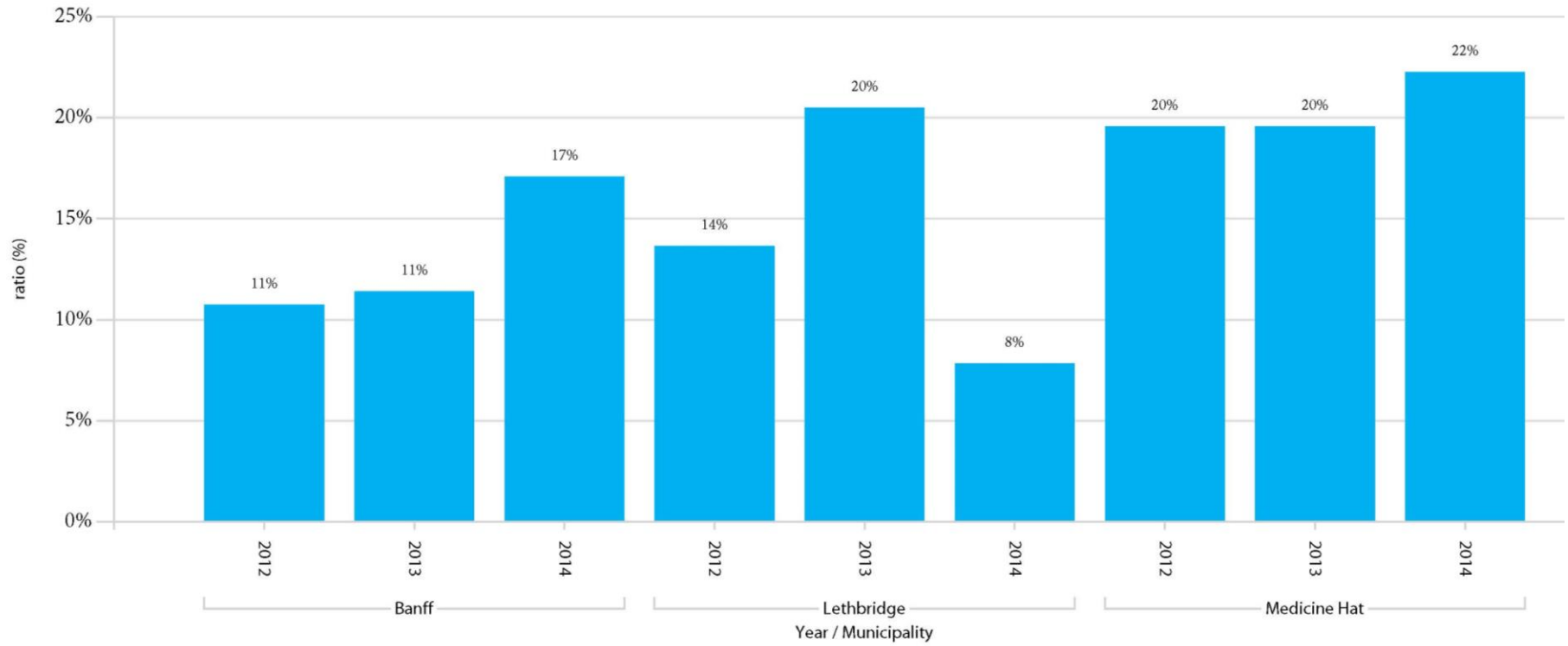
2.9.2 Lessons Learned

1. The overall average operating expense per revenue hour of the transit system is $88. The range is from $71 per revenue hour (Medicine Hat 2012) to $107 (Banff 2014).

2. Operating expense increases as rider services are added to the transit system, e.g. electronic fare boxes, "Next Bus" electric signage.

2.10 Total Vehicle Maintenance Costs vs. Total Direct Costs (%) – Efficiency

This chart shows the ratio of maintenance costs (internal + contracted) to total direct costs for local and specialized transit services. Vehicle maintenance costs are a prat of the direct cost to provide the transit service. Municipalities are in order from lowest to highest percentage based on the average of 2012, 2013, 2014 results.



2.10.1 Maintenance Costs vs. Total Direct Costs Data (See Section 3 for definitions of each column heading)

Municipality	Year	Local Maintenance Costs ($)	Specialized Maintenance Costs ($)	Total Maintenance Costs ($)	Total Direct Costs ($)	Ratio (%)
Banff	2012	$133,000	$0	$133,000	$1,235,981	11%
	2013	$138,000	$0	$138,000	$1,208,000	11%
	2014	$222,151	$0	$222,151	$1,299,295	17%
Lethbridge	2012	$1,135,329	$258,870	$1,394,199	$10,210,301	14%
	2013	$1,875,417	$525,164	$2,400,581	$11,711,418	20%
	2014	$553,886	$267,972	$821,858	$10,482,019	8%
Medicine Hat	2012	$818,611	$165,545	$984,156	$5,027,073	20%
	2013	$871,129	$143,319	$1,014,448	$5,184,123	20%
	2014	$1,052,596	$170,864	$1,223,460	$5,494,154	22%

NOTES:

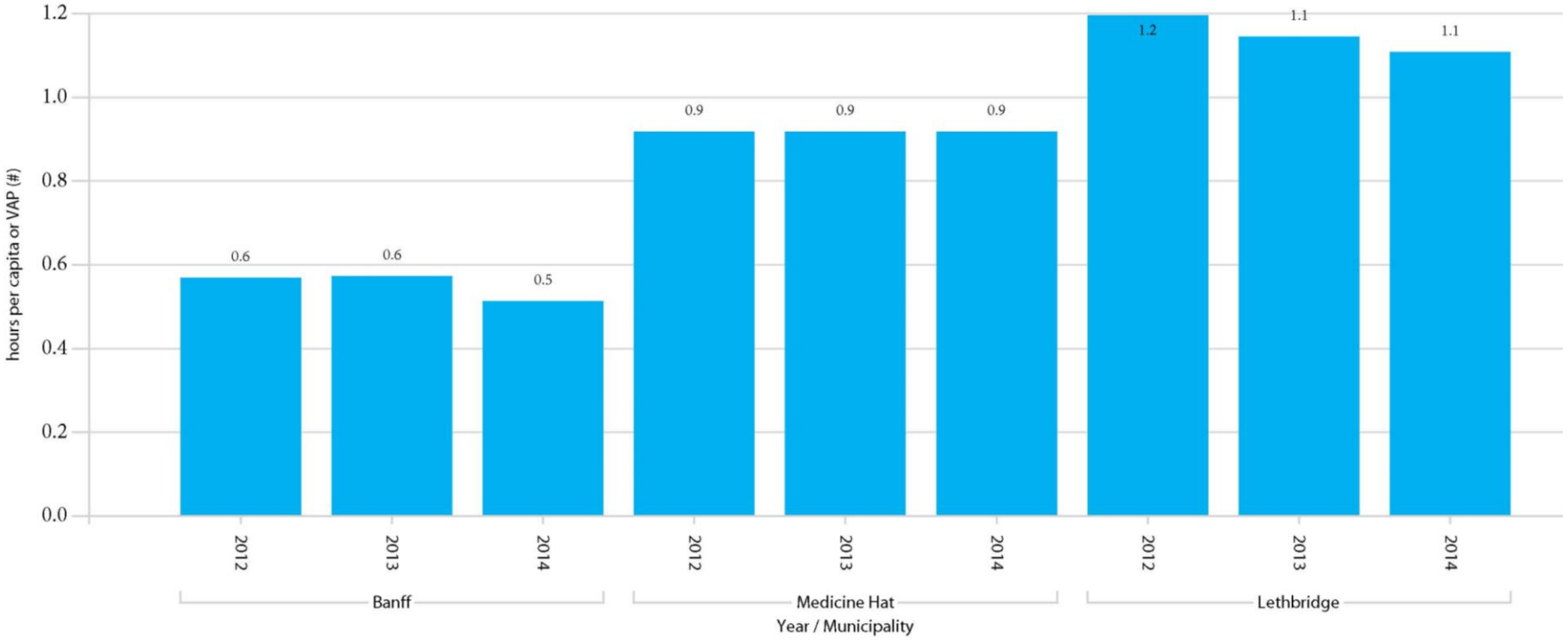
1. Maintenance costs for transit vehicles;
   - Includes - internal parts and labour costs + contracted maintenance costs
   - Excludes - buildings maintenance, bus cleaning and fueling costs

2.10.2 Lessons learned

1. The overall average percentage of maintenance costs is 14% of total direct costs. The range is from 8% (Lethbridge 2014) to 22% (Medicine Hat 2014).

2.11 Local Revenue Hours (hours/capita or VAP) – Effectiveness

This chart shows the number of hours local transit buses are available to riders per capita or VAP. Municipalities are in order from lowest to highest hours/capita based on the average of 2012, 2013, 2014 results.



2.11.1 Local Revenue Hours Data (See Section 3 for definitions of each column heading)

Municipality	Year	Revenue Hours (#)	Municipal Population or VAP (#)	Revenue Hours per Capita or VAP (#)
Banff	2012	13,722	24,118	0.6
	2013	13,722	23,963	0.6
	2014	13,722	26,698	0.5
Lethbridge	2012	106,510	89,074	1.2
	2013	103,519	90,417	1.1
	2014	103,038	93,004	1.1
Medicine Hat	2012	56,162	61,180	0.9
	2013	56,162	61,180	0.9
	2014	56,162	61,180	0.9

NOTES:

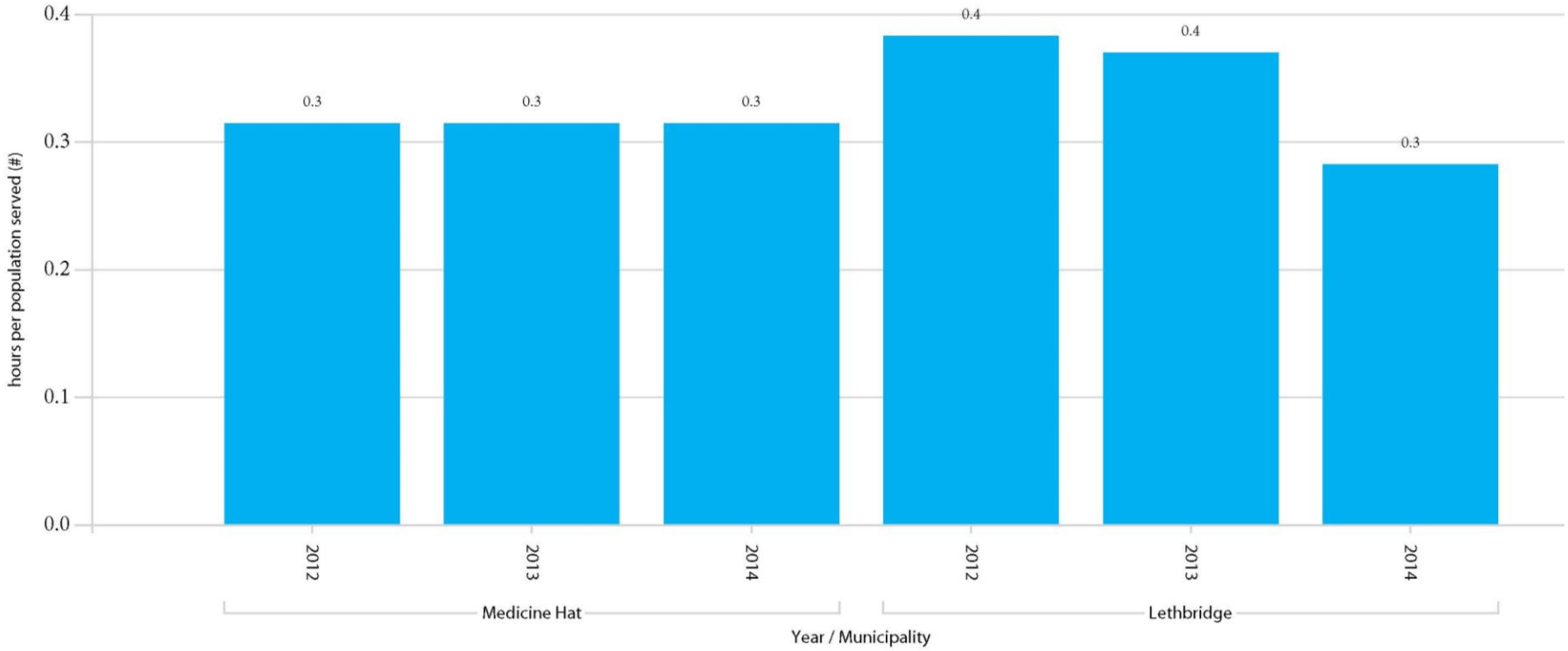
1. Total revenue hours excludes time for deadheading (driving to and from the start of a route) and for garage layovers.

2.11.2 Lessons learned

1. The overall average revenue hours per capita or VAP are 0.9 for the local transit system. The range is from 0.5 revenue hours per capita or VAP (Banff 2014) to 1.2 (Lethbridge 2012).

2.12 Specialized Services Revenue Hours (hours/population served) – Effectiveness

This chart shows the number of hours that specialized services buses are available to riders per population served. Municipalities are in order from lowest to highest hours/capita based on the average of 2012, 2013, 2014 results.



2.12.1 Specialized Services Revenue Hours Data (See Section 3 for definitions of each column heading)

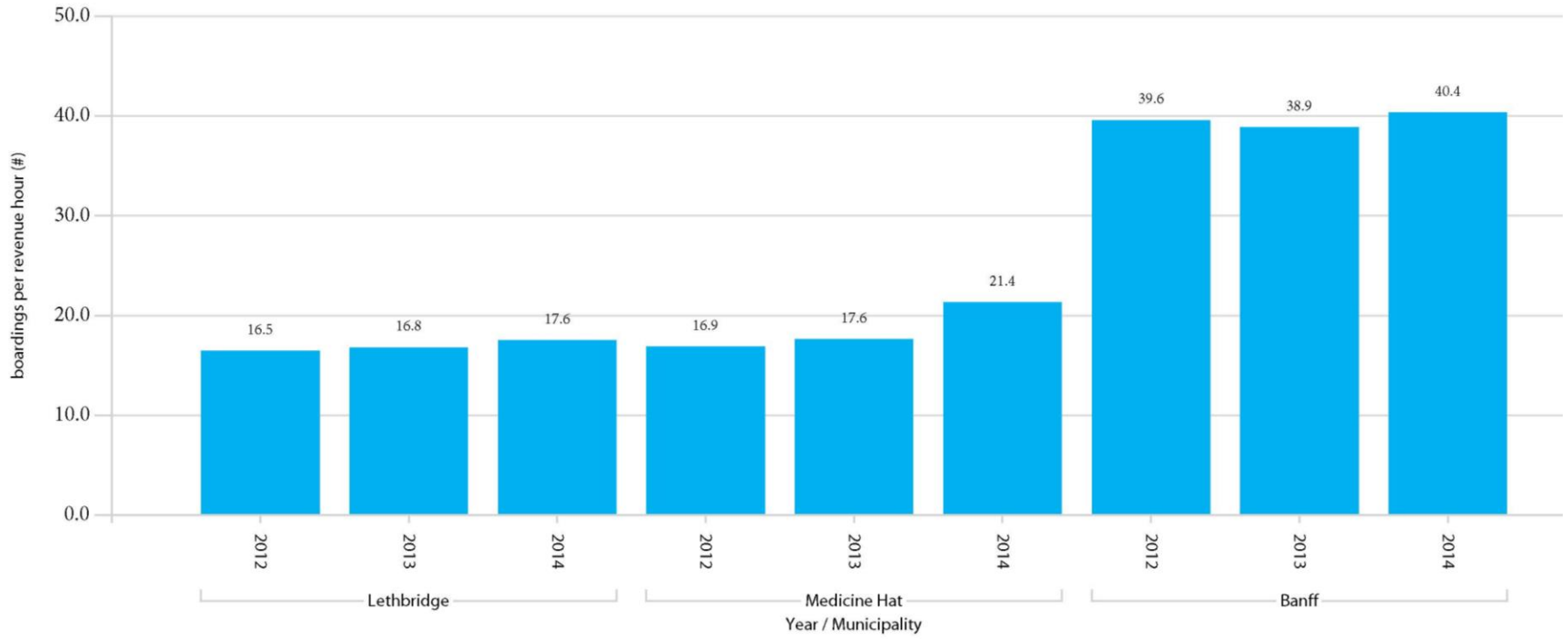
Municipality	Year	Revenue Hours (#)	Population Served (#)	Revenue Hours per Population Served (#)
Lethbridge	2012	34,162	89,074	0.4
	2013	33,493	90,417	0.4
	2014	26,300	93,004	0.3
Medicine Hat	2012	21,006	66,680	0.3
	2013	21,006	66,680	0.3
	2014	21,006	66,680	0.3

2.12.2 Lessons learned

1. The overall average specialized services revenue hours are 0.3 per population served. The range is from 0.3 revenue hours per population served (Medicine Hat 2012 – 2014, Lethbridge 2014) to 0.4 (Lethbridge 2012, 2013).

2.13 Local Transit Utilization 1 (boardings/revenue hour) - Effectiveness

This chart shows number of riders who board a local public transit bus per hour that transit is available. Municipalities are in order from lowest to highest riders/hour based on the average of 2012, 2013, 2014 results.



2.13.1 Local Utilization 1 Data (See Section 3 for definitions of each column heading)

Municipality	Year	Boardings (#)	Revenue Hours (#)	Boardings per Revenue Hour (#)
Banff	2012	543,445	13,722	39.6
	2013	533,568	13,722	38.9
	2014	554,071	13,722	40.4
Lethbridge	2012	1,757,949	106,510	16.5
	2013	1,742,251	103,519	16.8
	2014	1,808,793	103,038	17.6
Medicine Hat	2012	950,000	56,162	16.9
	2013	990,000	56,162	17.6
	2014	1,200,000	56,162	21.4

NOTES:

1. A "boarding" is a one rider boarding a bus using a ticket, pass or transfer.

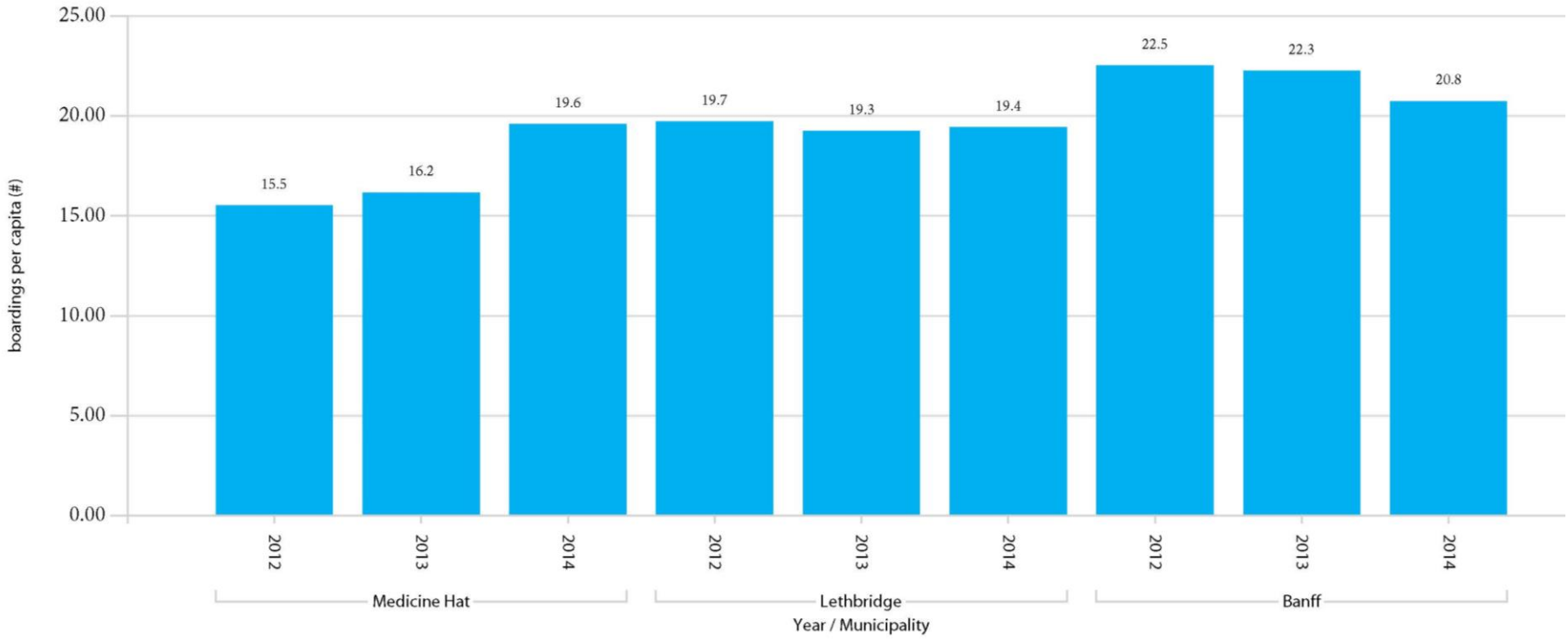
2. A "journey" (or ride) is one rider boarding buses using a fare and transfers until a trip is complete, e.g. a rider boards a bus and transfers three times to complete a trip. This is one journey and four boardings.

2.13.2 Lessons Learned

1. The overall average local transit boardings are 25.1 per revenue hour. The range is from 16.5 boardings per revenue hours (Lethbridge 2012) to 40.4 (Banff 2014).

2.14 Local Transit Total Utilization 2 (boardings/capita or VAP) - Effectiveness

This chart shows the number of riders boarding local public transit per capita or VAP. Municipalities are in order from lowest to highest boardings/capita or VAP based on the average of 2012, 2013, 2014 results.



2.14.1 Local Total Utilization 2 Data (See Section 3 for definitions of each column heading)

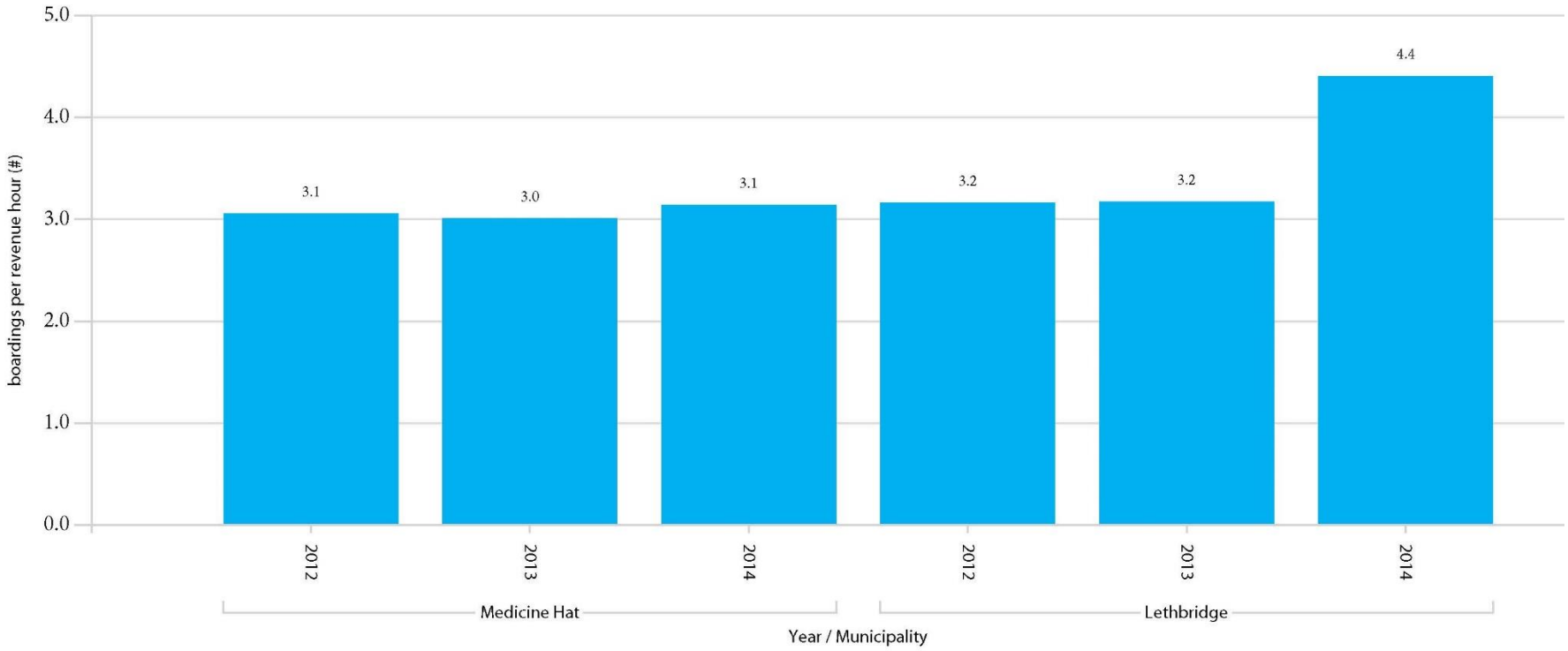
Municipality	Year	Boardings (#)	Municipal Population or VAP (#)	Boardings per Capita or VAP (#)
Banff	2012	543,445	24,118	22.5
	2013	533,568	23,963	22.3
	2014	554,071	26,698	20.8
Lethbridge	2012	1,757,949	89,074	19.7
	2013	1,742,251	90,417	19.3
	2014	1,808,793	93,004	19.4
Medicine Hat	2012	950,000	61,180	15.5
	2013	990,000	61,180	16.2
	2014	1,200,000	61,180	19.6

2.14.2 Lessons Learned

1. The overall average for local transit boardings is 19.5 per capita or VAP. The range is from 15.5 boardings per capita or VAP (Medicine Hat 2012) to 22.5 (Banff 2012).

2.15 Specialized Services Total Utilization 1 (boardings/revenue hour) - Effectiveness

This chart shows the number of specialized services transit bus boardings per hour that transit is available. Municipalities are in order from lowest to highest boardings/hour based on the average of 2012, 2013, 2014 results.



2.15.1 Specialized Services Total Utilization 1 Data (See Section 3 for definitions of each column heading)

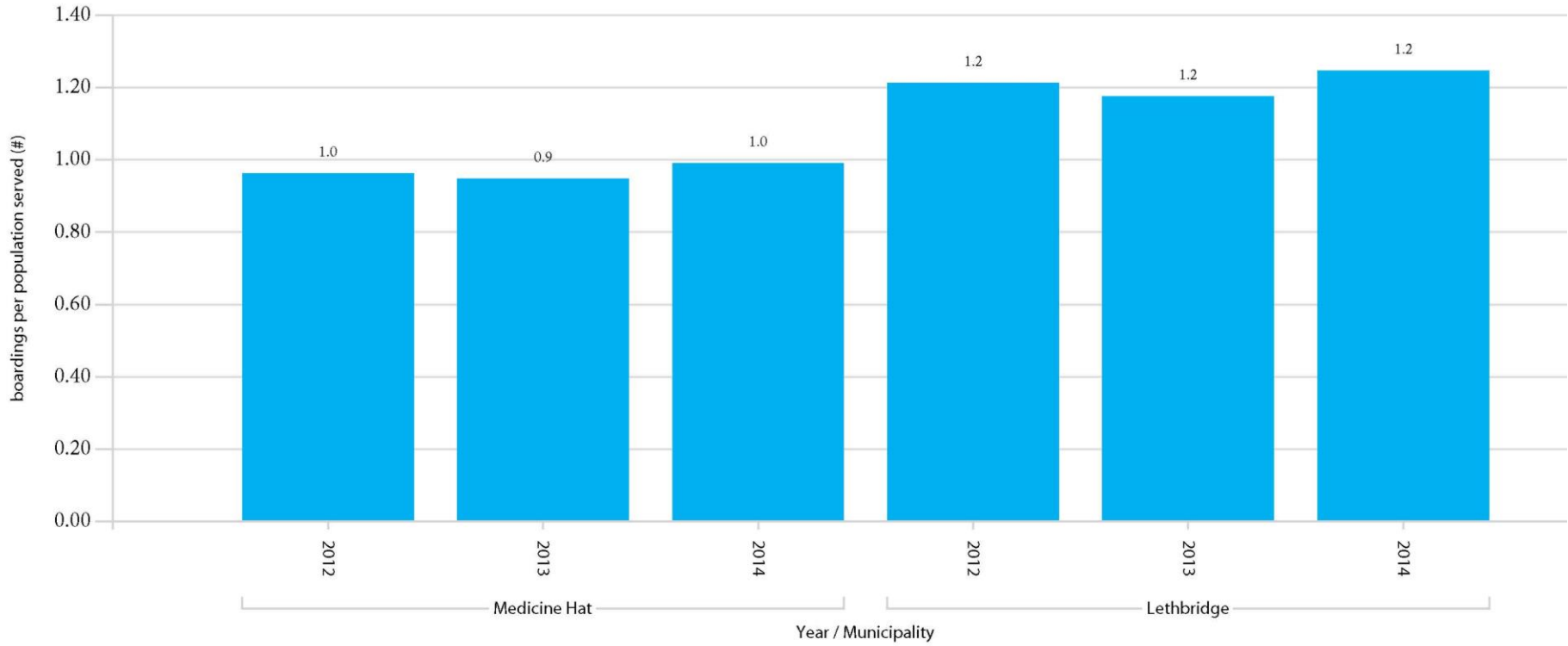
Municipality	Year	Boardings (#)	Revenue Hours (#)	Boardings per Revenue Hour (#)
Lethbridge	2012	108,108	34,162	3.2
	2013	106,345	33,493	3.2
	2014	115,969	26,300	4.4
Medicine Hat	2012	64,257	21,006	3.1
	2013	63,261	21,006	3.0
	2014	66,065	21,006	3.1

2.15.2 Lessons Learned

1. The overall average specialized transit boardings are 3.3 per revenue hour. The range is from 3.0 boardings per revenue hour (Medicine Hat 2013) to 4.4 (Lethbridge 2014).

2.16 Specialized Services Total Utilization 2 (boardings/population served) - Effectiveness

This chart shows number of riders boarding the specialized services transit buses per population served. Municipalities are in order from lowest to highest boardings/population served based on the average of 2012, 2013, 2014 results.



2.16.1 Specialized Services Total Utilization 2 Data (See Section 3 for definitions of each column heading)

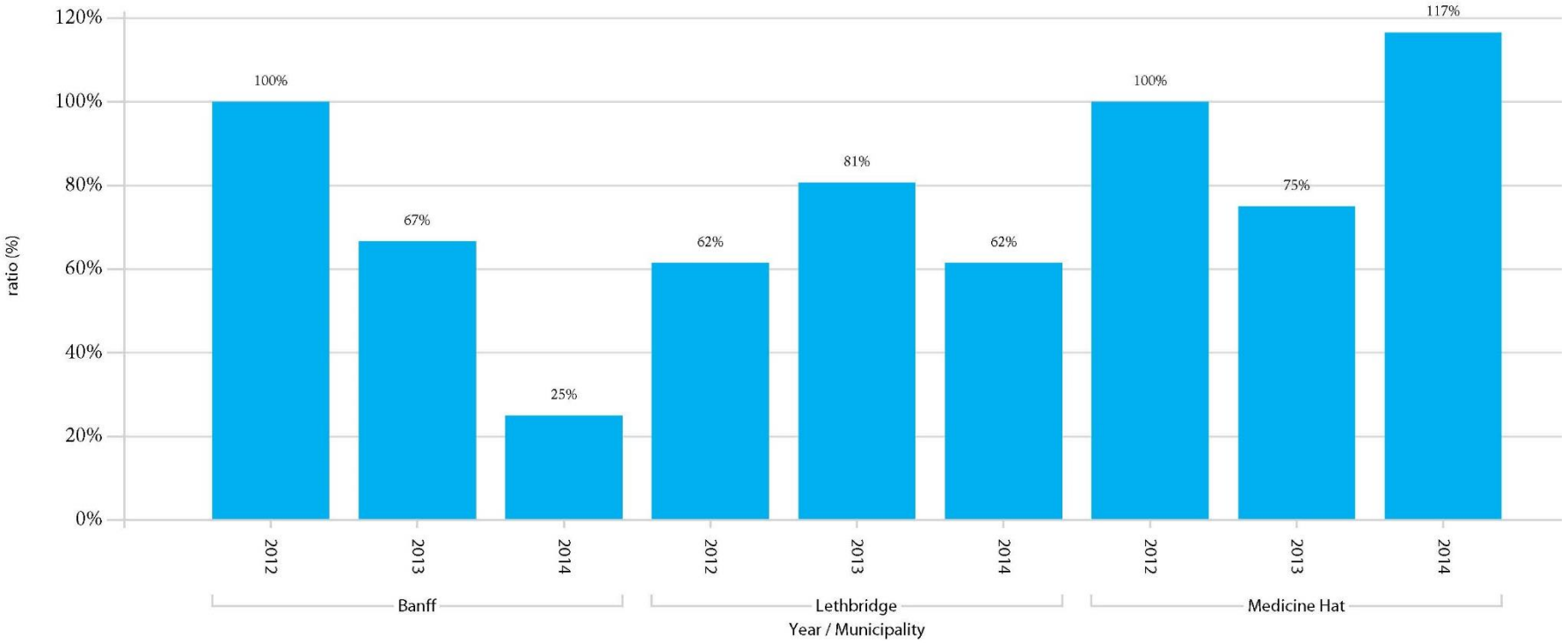
Municipality	Year	Boardings (#)	Population Served (#)	Riders per Population Served (#)
Lethbridge	2012	108,108	89,074	1.2
	2013	106,345	90,417	1.2
	2014	115,969	93,004	1.2
Medicine Hat	2012	64,257	66,680	1.0
	2013	63,261	66,680	0.9
	2014	66,065	66,680	1.0

2.16.2 Lessons Learned

1. The overall average for specialized services transit boardings is 1.1 per population served. The range is from 0.9 boardings per population served (Medicine Hat 2013) to 1.2 (Lethbridge 2012 - 2014).

2.17 Local Transit Spare Ratio (%) - Effectiveness

This chart shows the spare ratio. Spare ratio is the percentage of vehicles available during peak transit service periods but not being used, i.e. "the spares". A municipality with a high spare ratio indicates there are more spares available for peak service, if needed, than municipalities with lower spare ratios. Municipalities are in order from lowest to highest percentage based on the average of 2012, 2013, 2014 results.



2.17.1 Local Spare Ratio Data (See Section 3 for definitions of each column heading)

Municipality	Year	Vehicles Available for Local Service (#)	Vehicles Needed for Peak Local Service (#)	Spare Ratio (%)
Banff	2012	4	2	100%
	2013	5	3	67%
	2014	5	4	25%
Lethbridge	2012	42	26	62%
	2013	47	26	81%
	2014	42	26	62%
Medicine Hat	2012	24	12	100%
	2013	21	12	75%
	2014	26	12	117%

NOTES:

1. The spare ratio refers to the percentage of vehicles available but not being used, "the spares", during peak transit service periods.

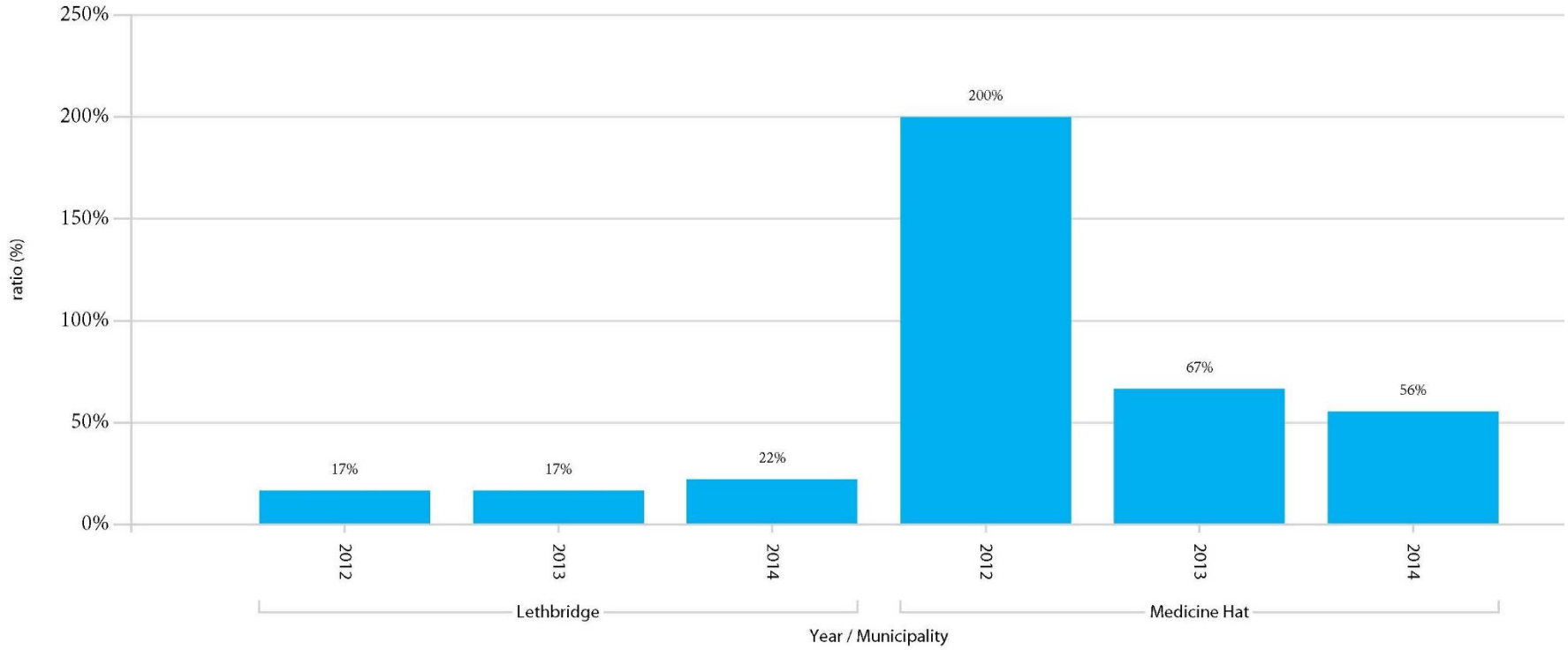
2. From the document *2015 Review of BC Transit*, "While there is no widely recognized Canadian [spare ratio] standard, the current USA DOT standard is 20% for fleets greater than 50 buses…This ratio will be higher in small systems". https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/services-policies-for-government/internal-corporate-services/internal-audits/bc-transit-review.pdf

2.17.2 Lessons Learned

1. The overall average local spare ratio is 76%. The range is from 25% (Banff 2014) to 117% (Medicine Hat 2014)

2.18 Specialized Services Spare Ratio (%) - Effectiveness

This shows the percentage of vehicles available but not being used, "the spares", during peak specialized transit service periods. Municipalities are in order from lowest to highest percentage based on the average of 2012, 2013, 2014 results.



2.18.1 Specialized Services Spare Ratio Data (See Section 3 for definitions of each column heading)

Municipality	Year	Vehicles Available for Specialized Service (#)	Vehicles Needed for Peak Specialized Service (#)	Spare Ratio (%)
Lethbridge	2012	21	18	17%
	2013	21	18	17%
	2014	22	18	22%
Medicine Hat	2012	27	9	200%
	2013	15	9	67%
	2014	14	9	56%

2.18.2 Lessons Learned

1. The overall average spare ratio for specialized services is 63%. The range is from 17% (Lethbridge 2012, 2013) to 200% (Medicine Hat 2012).

2.19 Transit Service Data **(See Section 3 for definitions of each column heading)**

This data consolidates the information about transit services for each municipality.

Part 1

Municipality	Year	Revenue Hours Local (#)	Revenue Hours Specialized Services (#)	Transit Utilization Local (boardings per year)	Transit Utilization Specialized (boardings per year)
Banff	2012	13,722	0	543,445	0
	2013	13,722	0	533,568	0
	2014	13,722	0	554,071	0
Lethbridge	2012	106,510	34,162	1,757,949	108,108
	2013	103,519	33,493	1,742,251	106,345
	2014	103,038	26,300	1,221,119	115,969
Medicine Hat	2012	56,162	21,006	950,000	42,250
	2013	56,162	21,006	990,000	42,250
	2014	56,162	21,006	1,200,000	42,250

Part 2

Municipality	Year	Spare Ratio Local (vehicles available)	Spare Ratio Local (peak vehicles needed)	Spare Ratio Specialized (vehicles available)	Spare Ratio Specialized (peak vehicles needed)
Banff	2012	4	2	0	0
	2013	5	3	0	0
	2014	5	4	0	0
Lethbridge	2012	42	26	21	18
	2013	47	26	21	18
	2014	42	26	22	18
Medicine Hat	2012	24	12	27	9
	2013	21	12	15	9
	2014	26	12	14	9

Part 3

Municipality	Year	Local Fleet Life Cycle Age (years)	Local Fleet Average Age (years)	Local Fleet Remaining Life (years)	Specialized Fleet Life Cycle Age (years)	Specialized Fleet Average Age (years)	Specialized Fleet Remaining Life (years)
Banff	2012	18	4	14	0	0	0
	2013	18	3	15	0	0	0
	2014	18	4	14	0	0	0
Lethbridge	2012	18	8	10	7	6	1
	2013	18	8	10	7	6	1
	2014	18	8	10	7	7	0
Medicine Hat	2012	15	9	6	9	4	5
	2013	15	6	9	9	4	5
	2014	15	4	11	9	3	6

2.20 Lessons Learned, General

Topics for future consideration;

1. Determine the ratio of cash fares vs. single tickets vs. media fares.
2. Trip performance – trips on time vs. total trips.
3. Regional transit performance measures when enough municipalities are added with similar regional transit systems.
4. Boardings vs. total bus capacity, i.e. the number of seats multiplied by the loading factor % (riders seated + standing), e.g. a bus with 50 seats and a loading factor of 150% has a total capacity of 75 passengers.

Database Manual, Transit Services

Alberta Municipal Benchmarking Initiative

3 Benchmarking Database Manual, Transit Services

3.1 Transit Services

Transit service is defined as a public passenger transportation system that provides citizens with a safe, reliable, efficient and affordable way of traveling to;

- Local locations in the municipality, e.g. work, school, shopping, health care, special events
- Regional locations beyond the municipality's borders

In addition, some municipalities operate specialized transit services for those with special needs.

3.2 Narrative Data

These factors vary with each municipality and influence the cost to deliver the service.

1. Service Hours
The total number of hours transit vehicles are in service per year.

2. Buses
The total number of transit vehicles operated by a municipality.

3. Bus Stops
The total number of stops at which transit vehicles stop for boardings and departures of riders.

4. Stops with Shelters
The total number of bus stops with weather protection for riders waiting for transit vehicles.

5. Stop Spacing
Stop spacing is a specified distance, in meters, between bus stops, used as a guideline for determining bus stop locations.

6. Distance to Stops
A specified distance, in meters, riders walk to get to a bus stop, used as a guideline for determining stop locations.

7. Coverage
Coverage is the percentage of the municipal population that is within the coverage distance from bus stops.

8. Average Bus Speed
This is the average speed of all transit vehicles per year.

9. Fare Model

A fare model is the fare collection approaches used for a variety of passenger types.

Types of payment

1. Cash
2. E-Cash
3. Tickets (Rides)
4. Passes
5. Contracts (rides are paid as a fix amount independent of the number)

Types of farebox/media

1. Manual; use cash, paper media (passes or tickets) and flash card/ID
2. Electronic; use cash, electronic cards (either contact or contactless), magnetic media, barcodes, smart phones or any other way of electronic payment

10. Vehicle Tracking System

A system used by a municipality to track the location of transit buses or vehicle while in service.

Includes some or all of;

1. Active or passive
2. GPS or cellular
3. Bus stop "Next Bus" display devices showing bus status, estimated time arrival
4. Web-based bus location on computers and smart phones

11. Loading Standard (%)

Loading standard is the percent of maximum rider seating capacity allowed in the bus. Greater than 100% means riders are allowed to stand.

12. Municipal Population LOCAL (#)

Municipal population is the number of permanent residents as measured by the most recent census.

Excludes

1. Non-resident population (second home owners)
2. Average visitor population (Banff, Canmore)

13. Visitor Adjusted Population (#)

Includes

1. Average visitor population (Banff)
2. Municipal population

14. Population Served, local and specialized (#)

Population served for local and specialized transit is the number of people in adjacent municipalities being served by the main municipality, e.g. Medicine Hat provides specialized transit service to an adjacent Municipality.

15. Population Served, regional (#)

Population served is the number of people having access to the municipality REGIONAL transit service.

Includes

EITHER Regional 1

1. Municipal population within the municipal boundaries. This applies to those municipalities whose majority of ridership for the REGIONAL transit vehicles, travel as commuters from the municipality to an adjacent city, and back to the municipality, daily.

OR Regional 2

2. Population served is the population in adjacent regions served by the municipal REGIONAL transit vehicles beyond the municipal boundaries when the ridership from and back to those regions, exceeds 20% of the total ridership, e.g. Medicine Hat

OR Regional 3

3. Municipal Population within the municipal boundaries + Population Served. Population Served is the population of adjacent regions served by the municipal REGIONAL transit vehicles beyond the municipal boundaries when the ridership is equally shared between the municipality and the adjacent regions, e.g. for Banff Regional transit, Population Served = Banff + Canmore

Excludes

1. Non-permanent population (second home owners)
2. Average visitor population (Banff, Canmore)

16. Non-permanent Population (#)

Non-permanent population is an unofficial count of people who reside occasionally with primary residence elsewhere.

Includes

1. Students
2. Seasonal/temporary workers
3. Second home owners

17. Developed Served Area (KM^2)

The developed area is the area within the municipal boundaries (geographic area), developed for resident and business use.

18. Demographic Categories (#)

Includes these categories;

1. Students
2. Children 0 – 15
3. Adults 15 – 65
4. Seniors 65+

3.3 Benchmark Data Definitions - Costs

All costs for Benchmarking are OPERATING COSTS ONLY. Capital costs are not to be included.

3.3.1 Local Transit Direct Costs - ($/year)

All operating direct costs involved in the activities to provide local services within the municipal boundaries.
NOTE: Direct costs are those for the activities without which there would be no service provided.

Includes costs for

1. Scheduling, e.g. a specific timetable giving specific times of departure and arrival at waypoints along the route OR timetable giving the frequency of service on a route at particular phases of the day with no specific departure times
2. Vehicle tracking, e.g. use of automatic vehicle location (GPS) in individual vehicles with software that collects these fleet data for a comprehensive picture of vehicle locations
3. Operating a Demand Response Service, e.g. dial-a-ride
4. Repair and Maintenance of bus stops, bus stations/terminals, vehicle storage premises, e.g. cleaning, only if not done Facilities department
5. Repair and Maintenance of vehicles, Internal parts and labour, and contracted costs for maintenance

Excludes

1. Regional transit service cost
2. Specialized Services transit service cost

Examples of direct operating costs

1. Labour, wages and benefits
2. Contracted Costs for fleet repairs and maintenance by 3rd party contractors
3. All other direct costs
   - Consumables used, e.g. materials and small equipment (not capitalized for amortization)
   - Compulsory job-related training for certified staff, including first-aid, WHIMIS, driver training, systems training e.g. fare boxes, accessible service,
   - Licensing Fees for software applications, excludes chargeback from Corporate IT
   - Software Maintenance, excludes chargeback from Corporate IT
   - Fuel for vehicles
   - The internal costs for inspections, repair and maintenance of bus stops, bus stations/terminals/vehicle storage and transit vehicles

3.3.2 Regional Transit Direct Costs – ($/year)

All operating direct costs involved in the activities to provide regional transit services for developed areas beyond the municipal boundaries.

Includes costs for

1. Scheduling, e.g. a specific timetable giving specific times of departure and arrival at waypoints along the route OR timetable giving the frequency of service on a route at particular phases of the day with may have no specific departure times
2. Vehicle tracking, e.g. use of automatic vehicle location (GPS) in individual vehicles with software that collects these fleet data for a comprehensive picture of vehicle locations
3. Repair and Maintenance of bus stops, bus stations/terminals, vehicle storage premises, if not done by Facilities department
4. Repair and Maintenance of vehicles, Internal parts and labour, and contracted costs for maintenance

Excludes

1. Local transit service cost
2. Specialized Services transit service cost

Examples of direct operating costs

1. Labour, wages and benefits, not broken out due to union negotiations
2. Contracted costs for fleet repairs and maintenance by 3rd party contractors
3. All other direct costs;
   - Consumables used, e.g. materials and small equipment (not capitalized for amortization)
   - Compulsory job-related training for certified staff, including first-aid, WHIMIS, driver training, systems training e.g. fare boxes, accessible service
   - Licencing Fees for software applications, excludes chargeback from Corporate IT
   - Software Maintenance, excludes chargeback from Corporate IT
   - Fuel for vehicles
   - Internal Inspections, repair and maintenance, the internal costs for bus stops, bus stations/terminals/vehicle storage

3.3.3 Special Services Direct Costs – ($/year)

All operating direct costs involved in the activities to provide special services for qualified riders.

Includes

1. As above for Local and Regional

Excludes

1. Local and regional transit

3.3.4 Labour Direct Costs ($/year)

The total cost of wages/salaries and benefits to provide the transit service.

NOTE: The labour direct cost will not be broken out for comparison due to possible effects on union negotiations.

3.3.5 Internal/Contracted Maintenance Direct Costs ($/year)

Internal costs are the cost of costs for parts and labour for operating a municipally owned shop for maintenance and repairs of fleet transit vehicles.

Contracted costs are for 3rd party contractors used for maintenance and repairs of fleet transit vehicles.

Includes maintenance of vehicles for;

1. Local
2. Regional
3. Special services

Excludes

1. Fuel
2. Buildings maintenance costs
3. Bus cleaning and fueling maintenance costs

3.3.6 Total Operating Revenue ($/year) local, regional and special services ($/year)

Revenue is the dollar amount of fares from ridership per year.

Includes

1. Revenue from cash fares
2. Revenue from single use tickets
3. Revenue from all pass and media fares.

3.3.7 Indirect Costs ($/year)

Indirect costs are all costs for the activities to manage and support the Transit Service operations.

Includes

1. Management of the transit operations, e.g. salaries & benefits/office costs for managers and support staff
2. Training; e.g. soft-skills (if not covered by HR budget)
3. Memberships & Conferences, e.g. Canadian Urban Transit Association (CUTA)
4. Travel
5. Planning, e.g. for the activities of Transit Services department
6. Insurance
7. Utilities

Total indirect costs will be prorated (allocated) separately to local and regional transit, and specialized services activities in the database based on the percentage the direct cost of each

represents of the total direct costs to operate the transit system.

3.3.8 Overhead Costs ($/year)

Overhead costs are all operating costs of activities necessary for the continued functioning of the municipality but not directly associated with the services being offered.
NOTE: Overhead costs are for activities that keep the municipality operating without which all other services provided would eventually be disrupted.

Includes

1. Costs for departments such as human resources, IT, security, engineering, planning, financial services and Council, Administration, tax funded debt interest.

Allocation:

1. Total overhead costs will be allocated to each service area using a calculation in the database. The calculation includes these factors; for Fleet – number and value of vehicles, for Facilities – area, sq. ft., and for All Other Overhead – service area total cost and number of FTEs.

2. The overhead allocation for the service area will then prorated (allocated) separately to collection, diversion and disposal in the database based on the percentage the direct cost of each represents of total direct costs.

3.3.9 Amortization Costs ($/year)

Amortization is one way to capture the cost of depreciation, over time, of the assets required for a service and have to be replaced due to age or failure,. An alternative way is to have the cost of an annual amount set aside for future replacement of the assets, e.g. a capital replacement fund.

Amortization costs are the costs for capital assets from the tangible capital assets system.

Includes

1. Vehicles
2. Equipment
3. Buildings

3.3.10 Out of Scope Costs ($/year)

Out of scope costs are all operating costs for activities not captured in the Direct Costs. The total of these costs will be used by Finance to ensure all operating costs for transit services are accounted for as recorded in the municipality's annual Non-Consolidated Financial Statements.

Includes

1. Dedicated school buses or charter service transit

3.4 Data Definitions - Service

3.4.1 Municipal Transit Services

A transit service is regular operation of transit buses or vehicles on a route, e.g. fixed route or on-demand, calling at stops that are at designated places along the roadside, according to scheduled hours of service.

Includes

1. Operating transit buses or other vehicles, e.g. a bus or another type of vehicle designed to transport passengers on shorter-distance public transport routes.
2. Operating stations/terminals, e.g. a facility where municipal or inter-municipal transit buses or other vehicles stop to pick up, drop off and transfer passengers. It may be a terminal station for a number of routes, i.e. route end point, or a transfer station where routes continue or where the transit operator offers other customer services, .e.g. fare purchase, complaints handling, lost and found, food services, and car parking. Stations/terminals can be located both at the perimeter of the municipality and centrally.
3. Operating bus facilities/depots, if not provided by a Fleet and Facilities Department, e.g. a facility/lot where buses are stored throughout the municipality.

   Includes some or all of;
   - Parking, inside and outside
   - Washing, for buses or vehicles
   - Fueling
   - Fuel storage tanks
   - Staff room
   - Dispatching
4. Operating a repair facility, e.g. for bus maintenance, repairs, and refurbishment, if not provided by a Fleet and Facilities Department

   Includes
   - Inspection pits
   - Brake test lane
   - Repair bays
   - Maintenance scheduling
   - Lifecycle management
5. Operating a fare collection system, e.g. manual or electronic
6. Marketing and public education, e.g. website, brochures

3.4.2 Revenue Hours: Local, Regional and Specialized Services

Revenue hours are the total of those hours when transit buses and vehicles are in service.

Includes

1. Number of hours transit buses and vehicles of all types are in service, e.g. for each bus type = number of buses times the number of hours each bus is in service

Excludes

1. Non-revenue hours, the number of hours buses are not in service
    - Deadheading hours, if known, e.g. when a public transit vehicle operates without carrying or accepting passengers, such as when coming from a garage to begin a first trip of the day
2. Layovers, if known, e.g. for public transit describes a short period of recovery time built into the schedule. Layovers are used to recover from delays caused by earlier traffic congestion or excess boarding times. During a layover there may also be a change of driver. Layovers are often scheduled at busy stops, including bus stations, central locations and shopping malls.

3.4.3 Transit Utilization; Local, Regional and Special Services

Utilization is the number of passengers who board public transportation buses per revenue hour and per capita or VAP or population served.

Includes

1. Number of boardings, e.g. riders who pay fare using cash or media, or use a transfer to board a bus.

NOTE:

- Medicine Hat has a manual fare system; cash fare + single ride ticket + transfer + monthly pass. Medicine Hat makes a quarterly estimate of boardings while other manual systems get a count of boardings daily.
- Banff and Lethbridge use electronic fare boxes that handle cash and electronic media fares, and transfers. The electronic system gives an actual (accurate) count of boardings.

Excludes

1. Rider journeys; a journey or "ride" is one rider boarding buses for a trip until that trip is complete regardless of the number of times a transfer is used. For example; a rider boards a bus and transfers three times to complete a trip. This is one journey and four boardings.

3.4.4 Spare Ratio (%) Transit

The spare ratio refers to the percentage of vehicles available for service but not being used, "the spares", during peak transit service periods. A municipality with high spare ratio percentages indicates there are more vehicle spares available for peak service, if needed, than

for municipalities with a lower spare ratio. The calculation is a simple percentage of the total fleet size, i.e. total # buses available for active service less # buses used for peak service divided by the # buses used for peak service.

3.4.5 Fleet Life Cycle Age (years)

This is the average expected number of years transit vehicles will be kept in service; equals the amortization period.

3.4.6 Fleet Average Age (years)

This is the average age of transit vehicles from acquisition to the present year.

3.4.7 Trips On-Time Performance (%)

On-time trips performance is the number of trips arriving and departing on-time as a percentage of the total trips.

The industry standards are shown with Lethbridge goals as an example.

On time Arrival	**Early**	**Late**
Industry Standard	> 1-5 min	> 3-5 min
E.g. Lethbridge	> 1 min	> 2 min

On time Departure	**Early**	**Late**
Industry Standard	> 1 min	> 3 min
E.g. Lethbridge	> 1 min	> 2 min

3.5 Benchmark Performance Measures (PM) Calculations

All calculations are made in the database system based on finalized data input from municipalities.

Efficiency

1. Transit Total Cost ($/capita or VAP)

$$\frac{Local\ Transit\ Costs + Specialized\ Services\ Transit\ Costs}{Municipal\ Population\ or\ VAP}$$

2. Transit Total Cost ($/capita or VAP)

$$\frac{Transit\ Direct\ Costs,\ Local\ and\ Specialized + Indirect\ Costs,\ Local\ and\ Specialized + Prorated\ Overhead\ Costs + Amortization\ of\ Transit\ Assets,\ Local\ and\ Specialized}{Municipal\ Population\ or\ VAP}$$

3. Local Transit Costs ($/capita or VAP)

$$\frac{Transit\ Direct\ Costs,\ Local + Indirect\ Costs,\ Local + Prorated\ Overhead\ Costs + Amortization\ of\ Transit\ Assets,\ Local}{Municipal\ Population\ or\ VAP}$$

4. Specialized Services Transit Costs ($/population served)

$$\frac{Transit\ Direct\ Costs,\ Specialized\ Services\ +\ Indirect\ Costs,\ Specialized\ Services +\ Prorated\ Overhead\ Costs + Amortization\ of\ Transit\ Assets,\ Specialized\ Services}{Population\ Served}$$

5. Specialized Services Cost vs. Total Transit Service Cost (%)

$$\frac{Specialized\ Services\ Cost}{Total\ Transit\ Service\ Cost}\ X\ 100$$

6. Local Transit Cost Recovery, Revenue to Cost Ratio (%)

$$\frac{Total\ Operating\ Revenue\ (from\ fares,\ \ Local)}{Total\ Local\ Transit\ Costs} X\ 100$$

7. Specialized Services Transit Cost Recovery, Revenue to Cost Ratio 2 (%)

$$\frac{Total\ Operating\ Revenue\ (from\ fares\ Specialized\ Services)}{Total\ Specialized\ Services\ Transit\ Costs} X\ 100$$

8. Operating Expense (total direct + indirect costs per vehicle revenue hour)

$$\frac{Local\ Direct\ Costs\ \ + Local\ Indirect\ Costs +\ \ Specialized\ Direct\ Costs + Specialized\ Indirect\ Costs}{Total\ Vehicle\ Revenue\ Hours, Local + Specialized\ Services}$$

9. Total Vehicle Maintenance Costs vs. Total Direct Costs, (%)

$$\frac{Internal\ Costs + Contracted\ Costs\ for\ Maintenance, Local + Specialized}{Total\ Transit\ Direct\ Cost\ (Local + Specialized\ Services)}\ X\ 100$$

Effectiveness

10. Local Revenue Hours (hours/capita or VAP)

$$\frac{Revenue\ Hours\ Local}{Municipal\ Population\ or\ VAP}$$

11. Specialized Services Revenue Hours (hours/capita or VAP)

$$\frac{Revenue\ Hours\ Specialized\ Services}{Municipal\ Population\ or\ VAP}$$

12. Local Transit Utilization 1 (# boardings/revenue hour)

$$\frac{Number\ Count\ OR\ Estimate\ of\ Boardings}{Number\ of\ Local\ Revenue\ Hours}$$

13. Local Transit Utilization 2 (# boardings/capita or VAP)

$$\frac{Number\ Count\ OR\ Estimate\ of\ Boardings}{Municipal\ Popupation\ or\ VAP}$$

14. Specialized Services Total Utilization 1 (# boardings/revenue hour)

$$\frac{Actual\ Count\ OR\ Estimated\ \#\ of\ Boardings}{Number\ of\ Specialized\ Revenue\ Hours}$$

15. Specialized Services Total Utilization 2 (# boardings/capita or VAP)

$$\frac{Actual\ Count\ OR\ Estimated\ \#\ of\ Boardings}{Municipal\ Population\ \ or\ VAP}$$

16. Local Spare Ratio (%)

$$\frac{\#\ Vehicles\ available\ for\ Local\ Active\ Service - \#\ Vehicles\ Needed\ for\ Peak\ Service}{\#\ Vehicles\ Needed\ for\ Peak\ Service}\ X\ 100$$

17. Specialized Services Spare Ratio (%)

$$\frac{\#\ Vehicles\ available\ for\ Specialized\ Active\ Service - \#\ Vehicles\ Needed\ for\ Peak\ Service}{\#\ Vehicles\ Needed\ for\ Peak\ Service}\ X\ 100$$