

The City of Edmonton

YELLOWHEAD TRAIL

LITTER AUDIT

2014

PREPARED FOR

The City of Edmonton
Community Services Department
Community Standards Branch



PREPARED BY

MGM Management
Osoyoos, BC
250-495-4592
Final Report
December 2014

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Acknowledgements

This report was made possible through the efforts of a team of energetic and dedicated individuals. We wish to acknowledge the following persons:

- Lisi Monro, Acting Program Manager, Capital City Clean Up
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- Trevor Dennehy, Edmonton Transit
- Bruce Kobialko, Project Management and Maintenance Services
- Katie Hayes, Community Relations Advisor, Community Standards Branch
- Grant Blaines, Community Peace Officers, Community Standards Branch

Executive Summary

The City of Edmonton contracted MGM Management, a British Columbia based environmental consulting firm to conduct a litter audit throughout the city in 2007. A city-wide litter audit has been repeated in 2009, 2010, 2011, 2012 2013 and 2014. The 2009 audit is considered the baseline for comparison purposes for litter audits.

In 2010, twenty sites were selected as a stand-alone mini-audit to examine large litter along Yellowhead Trail corridor from 107 Street to the Beverly Bridge on both the eastbound and westbound lanes of this highway.

In 2012 and again in 2014, City staff requested that the Yellowhead Trail sites be re-audited to determine the state of littering in those locations. This litter audit examined 84 sub-categories of large litter, details of which appear in Appendix 1 & 2. This report describes the results of the 2014 large litter audit at the Yellowhead Trail sites.

MGM Management has conducted 33 litter audits for North American municipalities and provincial authorities since 2002. MGM Management has accumulated a litter database of over 93,000 litter observations from these combined litter audits.

In July 2014, the City conducted its seventh city-wide litter audit. A total of 1,895 items of large litter were observed by auditors on Edmonton streets during the 2014 city-wide litter audit. The 2014 city-wide litter audit averaged 15.4 large litter items per site compared to 16.0 in 2013, 15.7 in 2012, 17 in 2011, 19 in 2010, and 27 items per site in 2009.

As an adjunct to the main litter audit conducted in July 2014, City staff requested that the Yellowhead Trail sites, audited in 2010 and in 2012, be re-examined in 2014. This major arterial highway runs east and west through north Edmonton and connects two landfill operations at either end.

The Yellowhead Trail sites were located in the eastbound and westbound sections of Yellowhead Trail, between 107 Street and the Beverly Bridge (North Saskatchewan River).

Listed below are the locations of the 20 sites along with a map.

Litter Sites* – Yellowhead Trail Eastbound

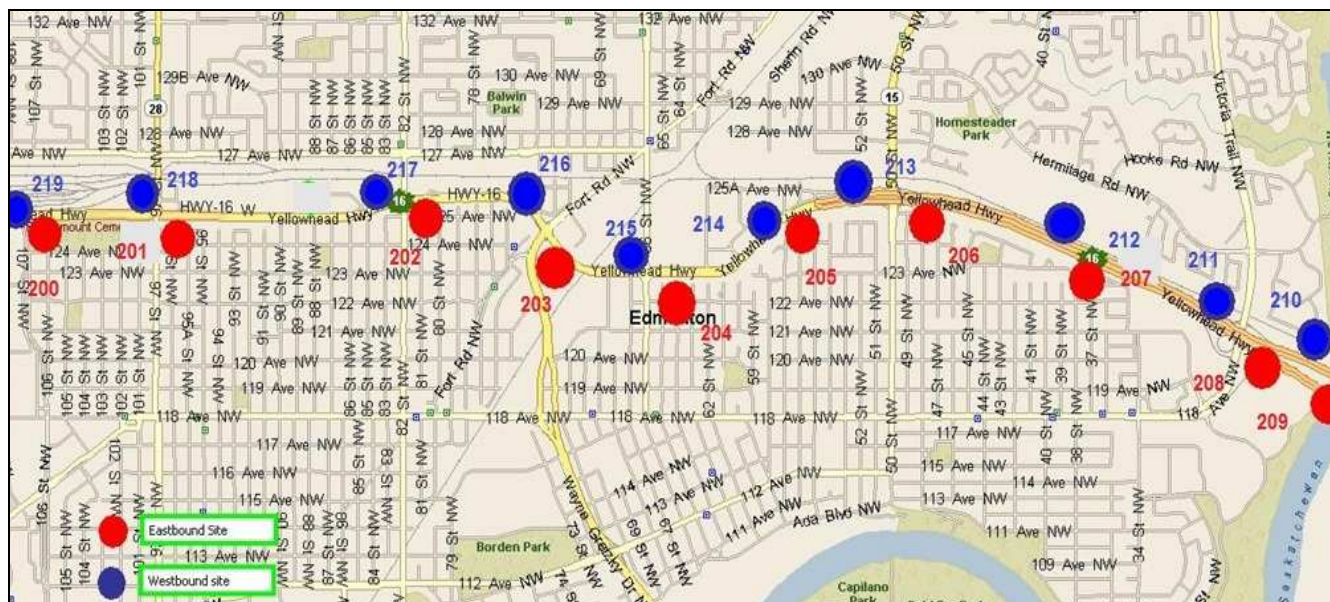
- Immediately east of 107 St. NW
- Immediately east of 97 St. NW
- Immediately east of 82 St. NW
- Immediately east of Wayne Gretzky Drive
- Immediately east of 66 St. NW
- Halfway between 66 St. NW – 50 St. (around 58 - 57 St. NW)
- Immediately east of 50 St. NW
- Halfway between 50 St. & Victoria Trail (around 38 – 37 St. NW)
- Immediately east of Victoria Trail
- Immediately east of Beverly Bridge (eastbound lane)

*For exact locations (GPS coordinates) of each site, see Appendix 3

Litter Sites - Yellowhead Trail Westbound

- Approximately 200 metres W of Beverly Bridge
- Approximately 200 metres W of 37 – 38 St.
- Approximately 200 metres W of Victoria Trail
- Approximately 200 metres W of 50 St. NW
- Approximately 200 metres W of 58 – 57 St. sites
- Approximately 200 metres W 66 St. NW
- Approximately 200 metres W of Wayne Gretzky Drive
- Approximately 200 metres W of 82 St. NW
- Approximately 200 metres W of 97 St. NW
- Approximately 200 metres W of 107 St. NW

Figure 1 - Map of Yellowhead Trail Sites



For a full description of the methodology used to conduct this litter audit, please refer to the City of Edmonton report entitled 2014 Litter Audit, December 2014.

Results

The consultant was requested to examine large litter on the 20 Yellowhead Trail sites, between 107 St. and the Beverly Bridge. There were no observations taken for small litter at the Yellowhead Trail sites in 2010, 2012 or the 2014 audits.

Yellowhead Trail is a major arterial roadway within the City of Edmonton, as well as a connector to Highway 16 at either end. The audits were conducted on Sunday July 6, 2014, commencing in the morning, in order to experience the lowest traffic volumes possible. Even with auditing the sites on a Sunday, high traffic volumes were noted from 6:15 AM until 6:30 PM. This roadway experiences high volumes of use throughout the week.

Table 1, on the following page presents the large litter findings for these sites.

Table 1 - Yellowhead Trail Litter Results 2014

Yellowhead Highway - 2014 Audit	2014 Yellowhead Results		2012 Yellowhead Results		2010 Yellowhead Results		2014 City-Wide Results	
	Total Items	% of Large	Total Items	% of Large	Total Items	% of Large	Total Items	% of Large
Large Litter								
Misc. Plastic	109.5	8.9%	81.5	9.8%	86	11.4%	107.0	5.6%
Misc. Paper	109.0	8.8%	90.5	10.9%	78	10.3%	107.0	5.6%
Misc. Cardboard	92.0	7.5%	35.5	4.3%	41	5.4%	62.5	3.3%
Printed material (newspapers, flyers etc.)	91.0	7.4%	41	5.0%	69.5	9.2%	68.0	3.6%
Tobacco other (packaging)	82.0	6.7%	57.5	6.9%	47.5	6.3%	140.0	7.4%
Construction debris	74.5	6.0%	86	10.4%	24	3.2%	83.0	4.4%
Vehicle & Metal Road Debris	72.5	5.9%	37.5	4.5%	34	4.5%	97.0	5.1%
Plastic bags - not retail	64.0	5.2%	27	3.3%	18.5	2.5%	53.0	2.8%
Home Articles	49.0	4.0%	28	3.4%	30	4.0%	74.0	3.9%
Misc. Paperboard	48.0	3.9%	44	5.3%	37.5	5.0%	87.5	4.6%
No Brand Name Towels / Napkins	46.5	3.8%	74	8.9%	77.5	10.3%	219.0	11.6%
Plastic packaging other	40.5	3.3%	14	1.7%	5.5	0.7%	64.5	3.4%
Candy bar wraps	30.5	2.5%	23.5	2.8%	22.5	3.0%	2.0	0.1%
Cup Lids, Pieces lids	30.5	2.5%	21.5	2.6%	13	1.7%	52.5	2.8%
Paper Cups (Hot)	28.5	2.3%	13.5	1.6%	8	1.1%	72.5	3.8%
Receipts (forms, bus transfers, etc.)	25.0	2.0%	16	1.9%	7	0.9%	70.5	3.7%
Other cloth	20.5	1.7%	11	1.3%	10	1.3%	39.0	2.1%
Paper packaging other	19.5	1.6%	1.5	0.2%	25.5	3.4%	27.0	1.4%
Paper Food Wrap	17.5	1.4%	10.5	1.3%	7	0.9%	43.0	2.3%
Plastic drink cups	13.0	1.1%	9.5	1.1%	3	0.4%	27.0	1.4%
Foil materials / foil pieces	12.5	1.0%	2.5	0.3%	4.5	0.6%	18.5	1.0%
Paper Cups (cold)	12.5	1.0%	5.5	0.7%	3.5	0.5%	29.5	1.6%
Water (plastic)	12.0	1.0%	8.5	1.0%	3	0.4%	9.0	0.5%
Condiment pkg (ketchup, vinegar etc.)	11.0	0.9%	12.5	1.5%	7.5	1.0%	28.0	1.5%
Paper bags - fast food	11.0	0.9%	2.5	0.3%	6.5	0.9%	14.0	0.7%
Cardboard boxes	9.5	0.8%	4	0.5%	0		6.5	0.3%
Paper clamshells	8.5	0.7%	0	0.0%	3	0.4%	7.5	0.4%
Zipper bags/ sandwich	8.5	0.7%	3	0.4%	5	0.7%	16.5	0.9%
Clothing or clothing pieces	7.5	0.6%	0	0.0%	1	0.1%	21.0	1.1%
Gum wrappers	7.0	0.6%	4.5	0.5%	6.5	0.9%	26.0	1.4%
Snack food packaging	6.5	0.5%	6.5	0.8%	5.5	0.7%	7.5	0.4%
Plastic Jars / Bottles/ Lids	5.5	0.4%	4	0.5%	3.5	0.5%	9.0	0.5%
Plastic retail bags	5.5	0.4%	4	0.5%	0.5	0.1%	13.5	0.7%
Polystyrene cups (foam)	5.5	0.4%	4.5	0.5%	4.5	0.6%	2.0	0.1%
Sweet packaging	4.5	0.4%	4.5	0.5%	6.5	0.9%	24.0	1.3%
Stationary (school, business etc.)	4.0	0.3%	2	0.2%	5	0.7%	11.5	0.6%
Container lids	3.0	0.2%	0.5	0.1%	0		6.0	0.3%
Paper beverage cases	3.0	0.2%	0	0.0%	0	0.0%	2.0	0.1%
Milk/Juice (Plastic)	2.5	0.2%	1	0.1%	1	0.1%	2.0	0.1%
Plastic wrap	2.5	0.2%	1.5	0.2%	0		4.0	0.2%
Poly Fast Food Plates	2.5	0.2%	0	0.0%	0		1.0	0.1%
Soft Drink (glass)	2.5	0.2%	0	0.0%			0.0	0.0%
Aseptic (Box)	2.0	0.2%	0	0.0%	1	0.1%	1.0	0.1%
Cans - steel	2.0	0.2%	1	0.1%	0.5	0.1%	1.0	0.1%
Polystyrene Clamshells	2.0	0.2%	0	0.0%			2.0	0.1%
Utensils	2.0	0.2%	2.5	0.3%	0		4.5	0.2%
Candy pouches	1.5	0.1%	4.5	0.5%	0		2.0	0.1%
Other confectionary	1.5	0.1%	0	0.0%	0		0.0	0.0%
Paper / foil composite wrap	1.5	0.1%	0	0.0%	1.5	0.2%	2.5	0.1%
Soft Drink (cans)	1.5	0.1%	2.5	0.3%	3	0.4%	18.0	0.9%
Beer bottles	1.0	0.1%	1	0.1%	0		0.0	0.0%
Beer Cans	1.0	0.1%	1	0.1%	4	0.5%	4.0	0.2%
Milk/Juice (Gable Top)	1.0	0.1%	0	0.0%			0.0	0.0%
Paper bags - not retail	1.0	0.1%	2.5	0.3%	2.5	0.3%	53.0	2.8%
Paper Fast Food Plates	1.0	0.1%	0	0.0%	0		1.0	0.1%
Soft Drink (plastic)	1.0	0.1%	0	0.0%			4.0	0.2%
Wine/ Liquor (plastic/other)	1.0	0.1%	0	0.0%	0		0.0	0.0%
Misc. Glass	0.5	0.0%	1.5	0.2%	0.5	0.1%	3.0	0.2%
Aerosol containers	0.0	0.0%	1	0.1%	0		0.0	0.0%
Cans - aluminium	0.0	0.0%	0	0.0%	1	0.1%	1.0	0.1%
Lottery ticket debris	0.0	0.0%	0	0.0%	1	0.1%	0.0	0.0%
Milk/Juice (glass)	0.0	0.0%	0	0.0%	1	0.1%	0.0	0.0%
Name brand napkins	0.0	0.0%					0.0	0.0%
Other plastic shells/ boxes	0.0	0.0%	0	0.0%	0	0.0%	1.0	0.1%
Paper retail bags	0.0	0.0%	1.5	0.2%	2.5	0.3%	1.0	0.1%
Paper trays	0.0	0.0%	0	0.0%	0	0.0%	3.0	0.2%
Paperboard (cereal type/fast food)	0.0	0.0%	8	1.0%	13.5	1.8%	0.0	0.0%
Plastic composite other	0.0	0.0%	0	0.0%	0	0.0%	3.5	0.2%
Polystyrene trays	0.0	0.0%	4.5	0.5%	0		3.0	0.2%
Six pack plastic rings	0.0	0.0%	0	0.0%	0.5	0.1%	5.0	0.3%
Sport drink plastic	0.0	0.0%	1	0.1%	9	1.2%	5.0	0.3%
Tire & Rubber debris	0.0	0.0%					0.0	0.0%
Wine/ Liquor (glass)	0.0	0.0%	0	0.0%	0		2.0	0.1%
Total Large Litter	1232.5	100%	827.5	100%	754	100%	1895.0	100%
Number of sites audited	20		20		20		123	
Average items / site	61.6		41.4		37.7		15.4	
Increase Since 2012 Audit	49%						-1.9%	City-wide
Increase Since 2010 Audit	63%						-20.2%	City-wide

When the consultant examined large litter rates along the Yellowhead Trail in 2010 this section of roadway presented twice as much litter per site than the average per site during the full 2010 city-wide litter audit (19 large litter items / site in the 2010 city-wide audits vs. 38 items per site in the 2010 Yellowhead Trail audit).

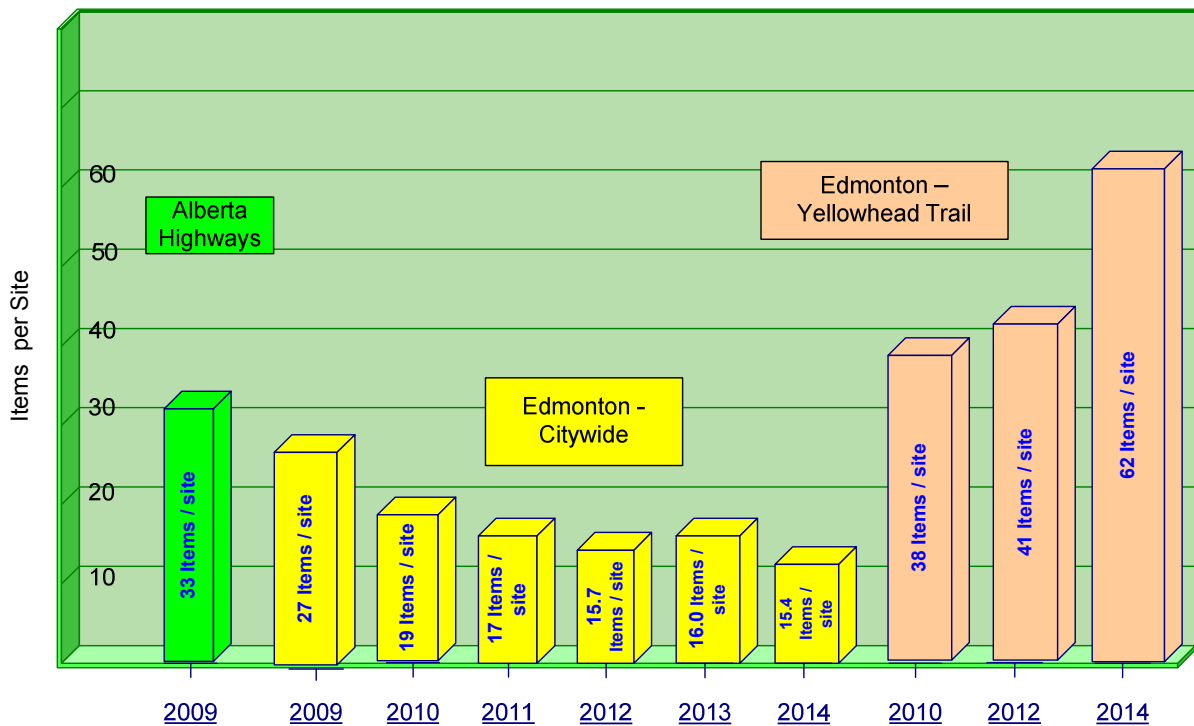
In 2012, the same trend was noted in the occurrence of large litter on the Yellowhead Trail sites, the difference being that Yellowhead Trail litter rate was 2.6 times greater than the city-wide large litter rate per site (15.7 items/site city-wide vs. 41.1 items/site Yellowhead Trail).

In 2014, the litter rate observed continued to increase reaching 62 items/site compared to a city-wide rate of 15.4 items / site, or a ratio of 4 times greater than the city-wide litter rate.

As illustrated in the chart below, when compared to a litter audit conducted in 2009 for Alberta Highways,¹ the Yellowhead Trail sites are more littered than most highway sites. The 2009 Alberta Highways audit examined major highways including those in a triangular area including Edmonton – to Canmore – to Calgary - to Lethbridge – to Medicine Hat – back to Calgary, an area which includes approximately 70% of the population of Alberta. The objective of that audit was to measure a baseline of large and small litter and to determine the effectiveness of provincial highway cleanup programs.

Figure 2 – Yellowhead Trail Litter Compared to City-wide Litter

Large Litter – Yellowhead Trail 2014 City-wide & Alberta Highways



- ¹ Alberta Transportation Litter Audit , 2009; Alberta Transportation, Highway Operations, Edmonton (Richard Chow – Traffic Operations Specialist, Alberta Transportation; Richard.Chow@gov.ab.ca)

As Figure 2 above illustrates, large litter observed on the 20 Yellowhead Trail sites in 2014 exceeded previously measured results on this section of roadway, and exceeded the Alberta Highways results of 2009.

The 2014 Yellowhead Trail litter sub-categories for miscellaneous paper and miscellaneous plastic were each 13% of total large litter observed on the highway sites.

Table 2, below, describes the Top 10 sub-categories, which accounted for 70% of the large litter counted.

Table 2 – Top 10 Litter Sub-categories Yellowhead Trail Corridor

Top Ten Subcategories - Yellowhead Hwy 2014						
	2014 Yellowhead Results		2012 Yellowhead Results		2010 Yellowhead Results	
	Total Items	% of Large	Total Items	% of Large	Total Items	% of Large
Large Litter						
1 Misc. Plastic	109.5	8.9%	81.5	9.8%	86	11.4%
2 Misc. Paper	109.0	8.8%	90.5	10.9%	78	10.3%
3 Misc. Cardboard	92.0	7.5%	35.5	4.3%	41	5.4%
4 Printed material (newspapers, flyers etc.)	91.0	7.4%	41	5.0%	69.5	9.2%
5 Tobacco other (packaging)	82.0	6.7%	57.5	6.9%	47.5	6.3%
6 Construction debris	74.5	6.0%	86	10.4%	24	3.2%
7 Vehicle & Metal Road Debris	72.5	5.9%	37.5	4.5%	34	4.5%
8 Plastic bags - not retail ¹	64.0	5.2%				
9 Home Articles	49.0	4.0%	28	3.4%	30	4.0%
10 Misc. Paperboard	48.0	3.9%	44	5.3%	37.5	5.0%
No Brand Name Towels / Napkins ²	46.5	3.8%	74	8.9%	77.5	10.3%
Sub-total	791.5		575.5		525	
% of total Large litter		64.2%		69.5%		69.6%
1. Plastic bags - not retail were not in top 10 sub-categories in 2012 or 2010						
2. No Brand Name Towels/ Napkins were not in top 10 subcategories in 2014, not included in sub-total.						

Table 3 –Yellowhead Trail – Site Rankings

Yellowhead Trail Large Litter - Site Rankings								
			2014		2012		2010	
		Rank	Items Observed		Rank	Items Observed	Rank	Items Observed
209	Site is immediately after the Beverly Bridge (eastbound lane). Site begins just before the Strathcona Science Prov. Pk. Sign.	1	125.0		5	76.5	1	108.5
203	Site is approx. 500 meters east of Wayne Gretzky Dr. commencing at 68 St. Site moved to 400 meters east because of large concrete underpass at Wayne Gretzky Dr.	2	110.0		8	40	11	30.5
216	Site is Approx. 500 metres W of Wayne Gretzky Dr.	3	101.5		2	91	6	49.5
204	Site is 200 meters east of 66 St. NW	4	90.5		6	60	5	49.5
206	Site is 200 meters east of 50St. NW	5	89.0		3	82	9	34.5
202	Site is 200 meters east of 82 St. NW	6	87.5		16	13	3	52.5
201	Site is 200 meters east of 97 St. NW	7	78.5		1	114	2	66
213	Site is Approx. 200 metres W of 50 St. NW	8	65.0		10	33.5	19	17
215	Site is at 68 St. NW in the westbound lane across from General Signs & Services Ltd.	9	65.0		4	80	20	14
205	Site is Half way between 66 St. NW - 50 St. (around 58 - 57 St. NW)	10	63.5		17	9	8	41.5
214	Site is Approx. 100 metres east of the 62 Street exit proceeding westbound.	11	53.5		19	7.5	15	23
200	Site is 200 meters east of 107 St. NW	12	52.0		11	32.5	18	19
208	Site is immediately after Victoria Trail	13	44.5		7	48.5	7	46
211	Site is Approx. 200 metres W of 37 - 38 Streets NW	14	40.5		13	23	17	19.5
207	Site is 400 meters before Victoria Trail (around 38 - 37 St. NW)	15	36.0		20	6	10	33.5
219	Site is Approx. 150 metres W of 107 St. NW	16	31.5		12	27	4	52
210	Site is Approx. 200 metres W of Beverly Bridge at Victoria Trail exit.	17	30.5		15	18.5	12	27
212	Site is Approx. 1,500 metres W of Victoria Trail	18	30.5		14	20.5	14	23
218	Site is Approx. 200 metres W of 97 St. NW at the end of the on ramp from 97 St. to Yellowhead Trail on the north side.	19	20.5		18	8	16	22.5
217	Site is Approx. 200 metres W of 82 St. NW. Site commences at end of ramp leading onto Yellowhead Tr.	20	17.5		9	37	13	25
			1,232.5			827.5		754

The most littered site was Site 209 immediately east of the Beverly Bridge. This site was the 5th most littered site in 2012 and the most littered site in 2010. For details of the rankings of sites see Table 3, above.

The main source of large litter in the section of the Yellowhead Trail sampled, originates from vehicular traffic using this roadway. It is a combination of accidental and intentionally littered materials. Accidental litter occurs when material are released from moving vehicles with unsecured loads, or careless transportation in open vehicles. Intentional litter are those items that a driver or passenger throws from a vehicle in the course of traveling on the roadway.

Again in 2014, as noted in 2012, the proportion of construction debris observed was considerably higher than that observed in 2010. As a percentage of total large litter, construction debris was about 3 times higher in the 2014 and 2012 audits when compared to the 2010 results. It must be recognized that even a few construction debris "spills" of litter, coming from moving vehicles can affect the increased occurrence of construction litter in this audit. The 2014 and 2012 data corroborates that construction debris resulting from unsecured loads of this type of waste being transported on the Yellowhead Trail remains a significant source of litter on this stretch of roadway.

Summary & Conclusions

The arterial corridor of Yellowhead Trail remains a significantly littered section of roadway within Edmonton. Due to the high traffic volume of this corridor, and its use for commercial vehicles transporting materials to city landfill sites, the occurrence of construction debris, vehicular debris and home article litter is relatively high. These materials are likely the result of unsecured and untarped loads of waste resulting in materials being ejected from moving vehicles.

The 2014 Yellowhead Trail litter audit results show that large litter occurrence has increased from 38 items per site to 62 items per site, an increase of 63% since 2010.

Ten sub-categories of large litter make up 64% of the large litter observed, in order of significance these are: Miscellaneous plastic, Miscellaneous paper, Miscellaneous Cardboard, Printed materials, Tobacco packaging, Construction debris, Vehicle and metal road debris, Plastic bags – not retail, Home articles and Miscellaneous paperboard. The first five of these sub-categories account for 58% of the large litter observed.

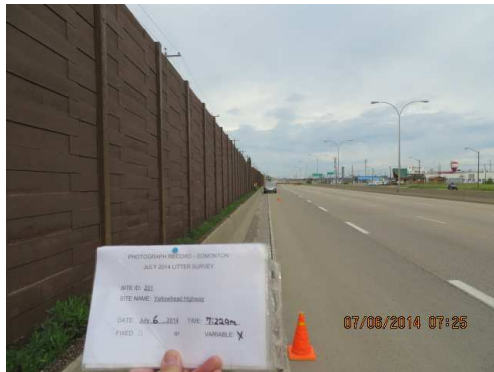
When we examined which sites were the most littered, we found that there was not a strong correlation between the rankings in 2010, 2012 and the rankings in 2014.

The most littered site in 2010 and in 2014 was Site 209 - immediately after the Beverly Bridge (eastbound lane) which was the fifth most littered site in 2012. Eastbound sites (Sites 201, 203, 204, 206, and 209) were more littered than westbound sites.

Photographs of Yellowhead Trail Sites



Site 200 – At 107 St., Eastbound (July 2014)



Site 201 – East 97 St., behind barriers (July 2014)



Site 208 – Ramp from Victoria Trail (July 2014)



Site 209 – Beverly Bridge, very littered (July 2014)



Site 216 – Near General Truck Rentals (July 2014)



Site 219 – West 107 St., adjacent rail yard (July 2014)

APPENDIX 1 – Large Litter Audit Form

Large Litter Site Form

CHECK TAPE RECORDER IS WORKING

Site ID Number: _____ Date: _____ Photos Taken: ____ Y/N

Start Time: _____ Finished Time: _____ Tape #: _____

Surveyor's Name: _____ FIXED or VARIABLE ____ F/ V (circle one)

If variable:

Width 1: Beginning: _____ ft. (up to 18ft.)

Width 2: Middle: _____ ft. (up to 18ft.)

Width 3: End _____ ft. (up to 18ft.) **Always 200 feet long**

Road type: Major highway ☐ Paved Rural Road ☐ Unpaved Rural Road ☐ Major City Street ☐

Minor City Street ☐ Laneway ☐ Other ☐ _____ (describe)

Lanes: 2, 4, 6, other (explain)

Is roadway / highway divided: _____ Y / N

Area Attribute:

Built up / urban area ☐ Residential ☐ Industrial ☐ Parkland ☐ Rural setting ☐

Grass Height: a. < 3 inches: ☐ b. 3" – 6": ☐ c. over 6": ☐ (Check one)

Catch point: Fence ☐ Hedge ☐ Curb ☐ Mower line ☐ Tree line ☐ Other ☐
_____ details

Visual rating of site: (1 = cleanest ; 4 = dirtiest) _____

Is there a Fast food store within 1 KM? _____ Y/N

Convenience store within 1 KM _____ Y/N

Traffic light / stop sign or major intersection within sight? _____ Y/N

Evidence of Litter Clean up? _____ Y/N

Cleanup details _____
_____ (text)

Additional comments : _____

APPENDIX 2 - Litter Categories & Sub-categories

Major Category	Sub-Category Number	Large Litter	Sub-Category Name	Material
1 - Beverage Containers	1	Beer Cans	Beverage Containers	Metal
	2	Beer Bottles (glass)	Beverage Containers	Glass
	3	Soft Drink (glass)	Beverage Containers	Glass
	4	Soft Drink (cans)	Beverage Containers	Metal
	5	Soft Drink (plastic)	Beverage Containers	Plastic
	6	Sport Drink (glass)	Beverage Containers	Glass
	7	Sport Drink (plastic)	Beverage Containers	Plastic
	8	Water (glass)	Beverage Containers	Glass
	9	Water (plastic)	Beverage Containers	Plastic
	10	Wine/ Liquor (glass)	Beverage Containers	Glass
	11	Wine/ Liquor (plastic/other)	Beverage Containers	Plastic
	12	Milk/Juice (plastic)	Beverage Containers	Plastic
	13	Milk/Juice (glass)	Beverage Containers	Glass
	14	Milk/Juice (gable top)	Beverage Containers	Composite
2 - Other Packaging	15	Foil Pouches	Other Packaging	Composite
	16	Aseptic (box)	Other Packaging	Composite
	17	Broken Glass Container	Other Packaging	Glass
	18	Six Pack Plastic Rings	Other Packaging	Plastic
	75	Foil Containers	Other Packaging	Metal
	64	Plastic Packaging Other	Other Packaging	Plastic
	65	Paper Packaging Other	Other Packaging	Paper
	66	Plastic /Composite other	Other Packaging	Composite
3 - Cups	67	Foil Materials /Foil Pieces	Other Packaging	Metal
	19	Plastic Drink Cups	Cups	Plastic
	20	Paper Cups (cold)	Cups	Paper
	21	Paper Cups (hot)	Cups	Paper
	22	Polystyrene Cups (foam)	Cups	Plastic
	23	Other Paper Cups	Cups	Paper
	24	Cup Lids, Pieces, Lids	Cups	Plastic
4 - Bags	25	Plastic Retail Bags	Bags	Plastic
	26	Paper Retail Bags	Bags	Paper
	27	Paper Bags - Fast Food	Bags	Paper
	28	Plastic Bags - Not Retail	Bags	Plastic
	29	Paper Bags - Not Retail	Bags	Paper
	30	Zipper Bags/Sandwich Bags	Bags	Plastic
5 - Boxes	31	Cardboard Boxes/ Box Material	Boxes	Paper
	32	Paperboard	Boxes	Paper
	33	Paper Beverage Cases	Boxes	Paper
	34	Polystyrene Clamshells	Boxes	Plastic
	35	Paper Clamshells	Boxes	Paper
	36	Other Plastic Shells/Boxes	Boxes	Plastic
6 - Other Containers	37	Plastic Jars / Bottles/ Lids	Other Containers	Plastic
	38	Glass Jars/Bottles	Other Containers	Glass
	39	Cans - Steel	Other Containers	Metal
	40	Cans - Aluminum	Other Containers	Metal
	41	Container Lids	Other Containers	Plastic
	42	Aerosol cans (paint, oils, etc.)	Other Containers	Metal
7 - Wraps	43	Paper Food Wrap	Wraps	Paper
	44	Paper /Foil Composite Wrap	Wraps	Composite
	45	Plastic Wrap	Wraps	Plastic

Major Category	Sub-Category Number	Large Litter	Sub-Category Name	Material
8 - Take-Out Extras	54	Condiment Packaging	Take-Out Extras	Plastic
	55	Utensils	Take-Out Extras	Plastic
	56	Name Brand Napkins / Serviettes	Take-Out Extras	Paper
	57	Paper Fast Food Plates	Take-Out Extras	Paper
	58	Poly Fast Food Plates	Take-Out Extras	Plastic
	59	Other Plastic FF Plates	Take-Out Extras	Plastic
	60	Plates - Other Mat's	Take-Out Extras	Other
9 - Trays	46	Polystyrene Trays	Trays	Plastic
	47	Paper Trays	Trays	Paper
	48	Other Trays	Trays	Other
10 - Confectionary & Snacks	49	Gum Wrappers	Confectionary & Snacks	Paper
	50	Candy Bar Wraps	Confectionary & Snacks	Paper
	51	Candy Pouches	Confectionary & Snacks	Paper
	52	Sweet Packaging	Confectionary & Snacks	Paper
	53	Other Confectionery	Confectionary & Snacks	Paper
	63	Snack Food Packaging	Confectionary & Snacks	Paper
11 - Cloth	61	Clothing or Clothing Pieces	Cloth	Fibres
	62	Other Cloth	Cloth	Fibres
12 - Printed & Fibre Materials	68	No Brand Name Napkins / Serviettes	Printed & Fibre Materials	Paper
	69	Lottery / Ticket Debris	Printed & Fibre Materials	Paper
	70	Printed Material	Printed & Fibre Materials	Paper
	71	Stationary (school, business etc.)	Printed & Fibre Materials	Paper
	72	Receipts (business forms, bus tickets)	Printed & Fibre Materials	Paper
13 - Tobacco	73	Cigarette / Cigar Debris	Tobacco	Paper
	74	Tobacco other	Tobacco	Other
14 - Other Miscellaneous	76	Misc. Paper	Other Miscellaneous	Paper
	77	Misc. Plastic	Other Miscellaneous	Plastic
	78	Misc. Paperboard	Other Miscellaneous	Paper
	79	Misc. Cardboard	Other Miscellaneous	Paper
	80	Misc. Glass	Other Miscellaneous	Glass
	81	Vehicle & Metal Road Debris	Other Miscellaneous	Other
	82	Construction debris	Other Miscellaneous	Other
	83	Tire & Rubber debris	Other Miscellaneous	Other
	84	Home Articles	Other Miscellaneous	Other

APPENDIX 3 – Site Locations

Yellowhead Trail - Litter Sites (2014)				
Site Id Number	Location and Description of Site	Latitude / Longitude1 (degrees/ minutes)	Latitude / Longitude2 (decimal degrees)	Comments
200	Site is 200 meters east of 107 St. NW	N53 34.877 W113 30.144	53.58128 -113.50240	
201	Site is 200 meters east of 97 St. NW	N53 34.877 W113 29.150	53.58128 -113.48583	DANGEROUS LOCATION - No shoulder available. Concrete barriers, site done inside barriers, 4 foot sound wall. Observations done between the barrier and the sound wall.
202	Site is 200 meters east of 82 St. NW	N53 34.947 W113 27.776	53.58245 -113.46293	
203	Site is approx. 500 meters east of Wayne Gretzky Dr. commencing at 68 St. Site moved to 400 meters east because of large concrete underpass at Wayne Gretzky Dr.	N53 34.689 W113 26.798	53.57810 -113.44654	
204	Site is 200 meters east of 66 St. NW	N53 34.702 W113 26.331	53.57830 -113.43887	
205	Site is Half way between 66 St. NW - 50 St. (around 58 - 57 St. NW)	N53 34.896 W113 25.662	53.58125 -113.42861	
206	Site is 200 meters east of 50St. NW	N53 34.910 W113 24.766	53.58183 -113.41277	
207	Site is 400 meters before Victoria Trail (around 38 - 37 St. NW)	N53 34.654 W113 23.582	53.57767 -113.39308	
208	Site is immediately after Victoria Trail	N53 34.363 W113 22.702	53.57271 -113.37836	
209	Site is immediately after the Beverly Bridge (eastbound lane). Site begins just before the Strathcona Science Prov. Pk. Sign.	N53 34.163 W113 22.114	53.56939 -113.36856	
210	Site is Approx. 200 metres W of Beverly Bridge at Victoria Trail exit.	N53 34.424 W113 22.652	53.57373 -113.37749	
211	Site is Approx. 200 metres W of 37 - 38 Streets NW	N53 34.633 W113 23.392	53.57725 -113.38982	
212	Site is Approx. 1,500 metres W of Victoria Trail	N53 34.823 W113 24.159	53.58038 -113.40266	
213	Site is Approx. 200 metres W of 50 St. NW	N53 34.942 W113 25.479	53.58237 -113.42465	
214	Site is Approx. 100 metres east of the 62 Street exit proceeding westbound.	N53 34.780 W113 25.963	53.57967 -113.43271	
215	Site is at 68 St. NW in the westbound lane across from General Signs & Services Ltd.	N53 34.712 W113 26.773	53.57853 -113.44621	
216	Site is Approx. 500 metres W of Wayne Gretzky Dr.	N53 34.953 W113 27.629	53.58255 -113.46049	Site is in front of General Truck Rentals and Floform Countertops Businesses. There are lots of cigarette butts on this site.
217	Site is Approx. 200 metres W of 82 St. NW. Site commences at end of ramp leading onto Yellowhead Tr.	N53 34.906 W113 28.268	53.58176 -113.47113	
218	Site is Approx. 200 metres W of 97 St. NW at the end of the on ramp from 97 St. to Yellowhead Trail on the north side.	N53 34.901 W113 29.654	53.58168 -113.49423	
219	Site is Approx. 150 metres W of 107 St. NW	N53 34.889 W113 30.456	53.58148 -113.50760	