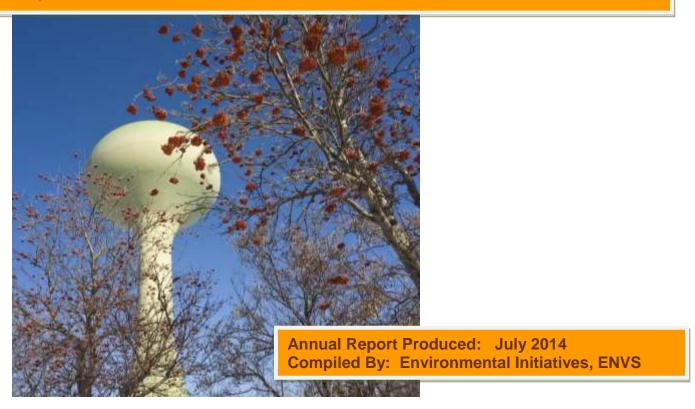


(January to December 2013)





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#### Introduction

The first step towards reaching your goals is setting them. Whether the goals are related to education or sporting milestones, financial success, business and artistic achievements or other types of triumphs; you've got to articulate what it is you are aiming for before you can begin working towards it. Reaching significant goals takes time and dedication. An athlete doesn't just show up the day of the big game. They have been working towards their game day goals, step by step, sometimes for years. And to really succeed, they have had the help and backing of those around them who have supported, coached, fostered, and assisted them in reaching their objectives.

The city of Red Deer's progress towards reaching goals set out in the Environmental Master Plan (EMP) is very much like the journey described above. It started in 2011, when City of Red Deer Council unanimously adopted the plan with the endorsement and encouragement of the Environmental Advisory Committee (EAC) and many community organizations and stakeholders. The plan contains goals and objectives around all aspects of Red Deer's environmental sustainability including air, water, transportation, waste, energy, built environment, and ecology. It sets out immediate, mid-term, and long-term actions and priorities to meet our environmental goals.

Over the last 3 years, The City has worked to demonstrate an ongoing commitment to implementing the plan's goals. In the years since the plan was adopted, not only has The City of Red Deer ramped up focus on environmental improvements in our community but The City has also become more aware of the need to seek support, collaboration, and leadership from many partners, allowing for important and significant environmental improvements to take shape.

In 2013, The City of Red Deer's commitment to plan implementation, monitoring improvement, and broadly reporting on progress was recognized by a "Sustainability in Action Award for communities over 10,000 population" presented by the Alberta Urban Municipalities Association (AUMA).

The EMP is an important tool in the implementation of the environmental component of The City's Municipal Sustainability Framework. The City is committed to annually reporting its progress towards the various plan targets to the community, in order to continue to improve and to keep the community informed and involved. The first annual report was released after 2011, followed by the 2012 report last year, and now we are able to provide the 2013 report. Some elements of this year's annual report will be similar to previous reports since our targets and objectives generally have not changed; but some aspects





will differ given the fact that we are building on previous results, have introduced new programs and actions, and have built new as well as expanded existing partnerships.

The intent of the EMP when adopted in 2011 was, and remains, to provide The City and Red Deer residents with a road map to improved environmental sustainability. To achieve this, the Plan presents clear goals and measureable environmental targets, as well as recommendations for actions for both The City of Red Deer and the greater community. Just as community involvement was integral to developing the plan in 2010-11, the actions of local Red Deerians are key to ongoing improvement of our environmental performance. As previous annual reports demonstrated, action not only by the government, but also by many partners, organizations, and residents help us move forward. In 2013, we've continued momentum with some new and important results such as our corporate greenhouse gas measures.

#### The Plan's Focus Areas

The intent of the EMP is to benefit every area of Red Deer's environment; therefore the plan identifies seven broad but encompassing focus areas: Water, Ecology, Transportation, Built Environment, Air, Energy, and Waste. Each focus area has an over-arching goal and identifies either two, three, or four metrics to measure progress towards this goal. The metrics include targets so that we know what we are striving for. There are 18 metrics total, each with a target we expect to achieve over the life of the plan. The previous annual reports explained what progress occurred for each of the metrics over the previous year and provided results for corresponding targets. The current annual report presents this information for 2013 alongside the 2012 results, allowing us to compare our performance.

In addition to establishing a benchmark and target, each metric includes actions that are recommended to help Red Deer achieve the EMP goals. Because we can't do everything at once, the actions are divided into immediate (top priority), short, medium, and long term timeframes. The Environmental Master Plan actions were identified by priority rating and assigned to a lead City Department. Many actions were also accompanied by a preliminary list of implementation partners, both within The City of Red Deer and from outside. Identifying a lead department as well as community partners was intended to strengthen relationships with stakeholders. Over the time since plan adoption in 2011 we've found that the EMP has resulted in improved partnerships and alignment with community groups. We believe that this allows us to combine resources to achieve common environmental goals.





#### The Goal of the Annual Report

The EMP was never intended to be just a paper document; it's meant to be a much more proactive tool for progress. The EMP was envisioned by the Environmental Advisory Committee and City Council as a road map to improved environmental sustainability. As a more proactive tool, there has to be progress tracking over the long haul. Just as marathon runners want to track which kilometer of the race they have just passed so that they know how close they are to meeting their long term goal of finishing in an estimated time; the idea behind providing an annual EMP report is to track our pace and progress towards

targets over the envisioned time frame. Depending on conditions and influences race pace can be affected, but runners keep the target of the finish line in sight, they keep momentum, they adjust and do not lose sight of the end objective. The EMP Annual report is our way of keeping momentum and of checking on our pace towards our goals.

The annual report will help us identify our accomplishments and also pinpoint what needs to be reconsidered or reset if we are not moving ahead in the way we anticipated or in the way the community expected.

It is important to keep in mind that the Environmental Master Plan is a 25 year plan. As a plan that includes shorter term all the way to longer term focus, not all actions can be or need to be completed in the first few years. This report also explores the achievements, progress, and actions of the Environmental Master Plan in 2013. That's part of the reason for an annual report – to answer and clarify for ourselves, the community, and our partners - what happened, what was achieved, and what still needs to be done?

Finally this report is also about celebrating achievements and inspiring progress. One of the chief ways to inspire others is to talk about what has been done, look at the results, and ask for support around what still needs to be achieved. As was done with previous years' reporting, we will be sharing annual report results not just in the form of this thicker, detailed document



City of Red Deer Mayor Tara Veer accepts the Sustainability in Action Award from AUMA President Linda Sloan in Calgary, November 2013.





but in the form of a report card to the community distributed widely in Red Deer and available on our City website.

In recognition of our commitment to regular monitoring and reporting, The City received the Sustainability in Action Award, from the Alberta Urban Municipalities Association (AUMA), at a province-wide meeting in November 2013. The award recognizes demonstrated excellence in achieving measurable environmental outcomes and recognizes achievement and progress with respect to The City's Environmental Master Plan. Further, it acknowledges The City's commitment to involve and report back to the community.

At the time of the award presentation, Mayor Tara Veer commented: "Sustainability is integrated into all we do through our strategic plan. The Environmental Master Plan is just one example of our overall approach to sustainability in which we work to develop a comprehensive plan, involve the community and measure our success. This award is truly a credit to the community for their stewardship and commitment to this plan, the environment and to building a more sustainable Red Deer."

### 2013 Year Highlights

During 2013 many groups and individuals worked hard to continue progress and to continue to seek the most relevant actions and efforts for environmental priorities in Red Deer.



#### Support and Advocacy

Support and advocacy for the Environmental Master Plan came forward in many ways. The Environmental Advisory Committee brought attention to the goals of the plan and some of the key environmental issues to be tackled by the plan by relying on it as a key base for the review and recommendation of environmental issues within their mandate of advising Council or Administration.





As part of their role as ambassadors to the plan the Environmental Advisory Committee's role included raising public awareness.

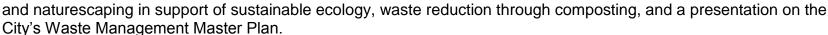
#### **Presentations**

Environmental Services staff delivered a presentation to the joint conference of the Canadian Water Resources Association and Alberta Watershed Planning and Advisory Councils in March 2013. The presentation focused on the water related targets and actions of the Environmental Master Plan and the progress being made.

#### Celebration and Education Events

The plan was celebrated throughout the year in various ways within the community.

 During Environment Week in June 2013, invited speakers covered pertinent topics within the plan's seven focus areas. These ranged from water conservation and the benefits of rain barrels, pruning



Approximately 62 residents attended these events to learn more about what they can do in their own lives to contribute to sustainability and assist in reaching the targets of the Environmental Master Plan.







• A "Green Screen" series of documentaries also ran throughout Environment Week in partnership with the Red Deer Public Library. It featured the films, "Wasteland", "Dirt," and "Queen of the Sun." Approximately 26 residents attended this series.



- In addition to celebrating Environment Week in June, seven distinct celebration days, one for each Environmental Master Plan focus area, were held throughout 2013. These events were held in conjunction with national or internationally recognized environment days. The events highlight each of the plan's seven areas and educate the public about the goals of the Environmental Master Plan.
  - Internationally recognized *Earth Hour* held in March reminded the public about the importance of conserving energy which linked to the Environmental Master Plan's energy targets. Many residents and community businesses and facilities participated by turning off all non-essential lights.
  - Events for *World Water Day* also a March event focused on the Canadian and United Nation's local and international goals of cooperation in protecting our water supplies.
    - Earth Day celebrations in April proved a great way to celebrate spring but also to involve local residents and families who wanted to get active in nature and think about the importance of the ecology goals of the EMP.
    - Jane's Walk took place during the first weekend of May and invited residents to walk within their community and consider the links between our environmental plans and good community planning policies. Guided walks were offered throughout the community including historic downtown, old rail lines, a revitalized inner-city neighbourhood and a morning walk to school in a residential area.
    - Clean Air Day in June involved a free vehicle emissions testing clinic for gasoline vehicles. It informed residents about vehicle emissions reduction, idle free vehicle operation, and other









- measures to protect local air. Approximately 100 vehicles were tested.
- World Car Free Day in September linked to the Environmental Master Plan's Transportation goals and sought to get people to try transit service or another way of moving around aside from their single occupancy vehicle for at least one day – but hopefully even more!



• Kick it to the Curb tied into the Waste Reduction goals of our Plan and was interconnected with Waste Reduction Week in October. New in 2013 was a waste reduction education event at the Waste Management facility. Many families joined in to learn more about the landfill operations through an in-depth tour and to see first-hand the type of waste being recycled and diverted in our community.

Celebration Days such as Jane's Walk were held in our community as part of promoting the objectives and targets of the Environmental Master Plan in 2013.





#### **Partners All-Aboard!**

Since the adoption of the EMP we have been fortunate to build many successful partnerships. Collaborating with partners has been a significant factor in advancing plan implementation. In 2013 local partners such as The Red Deer Public Library, Red Deer River Watershed Alliance, Waskasoo Environmental Education Society, Parkland Airshed Management Zone, Nova Chemicals, Lafarge Canada, Re-Think Red Deer, and Alberta Environment and Sustainable Resource Development as well as national and province wide partners such as ICLEI and Alberta Energy Efficiency Alliance (AEEA) provided tremendous effort, action-oriented assistance, and in-kind donations to ensure the actions of the plan advanced.

#### **Results Reporting**

A primary reason for producing an annual report is to record and track progress. The following table, *Table A: 2013 Report* on *Metrics and Measures*, presents the progress related to our 18 metrics. In most cases we've recorded the following information:

- The 2009 baseline measure (some baselines are for a later year in instances where data was not available or had to be collected and tabulated),
- The 2012 results as reported in last year's annual report for comparative purposes,
- The 2013 results being released here as part of this year's annual report, and
- Our targets for that metric (generally set for 2015, 2020, and 2035)

The table indicates whether the results-to-date suggest that we are on track to meet our 2015 (short term) target or whether additional actions or measures may be necessary as we get closer to 2015.

Overall, the results and metrics of *Table A* demonstrate that we have made some progress. Out of 18 areas of measurement, we have seen:





man-made park dedication, integrated pest management, fuel consumption per capita, share of dwelling units close to community amenities, trail kilometres per resident, corporate greenhouse gas reduction, per capita land consumption,
community amenities, trail kilometres per resident, corporate greenhouse gas reduction, per capita land consumption,
renewable energy purchase, and waste diversion.
Negative progress for 3 measures, namely, air quality (particulate matter metric only), average building energy intensity,
and modal split. Through various programs and initiatives we will be aiming to address these areas in 2014.
Flat-lining or limited progress on 1 measure - community gardens. There has been no change in the per capita
availability of community gardens between the year 2012 and 2013. There is a high level of interest in the city about
community gardens and it is hoped that new initiatives in 2014 will result in more urban gardening opportunities.
Uncertain or unknown results for the remaining 2 metrics (water quality of receiving bodies and urban forestry). The
necessary studies/research are underway for both of these areas but we're still a little ways out from determining
appropriate targets or baselines. We expect the data reports to be available in 2014 and 2015 at which time the EMP
can consider and incorporate results for these two metrics.

As we consider the 2013 results, it is important to recognize successful progress. However, it is also important to determine where our progress is not as strong and to think about the obstacles or barriers that may be impeding us, in order to improve.

The City is committed to continuing to engage our residents and encouraging new ideas, new options, and new motivation to go with our new results!





#### Table A: 2013 Report on Metrics and Measures

#### Benchmarks and Metrics Results 2012-2013

EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
WATER					
Potable water consumption provided through municipal water supply, per capita (L/cap/day)	Residential: 242 L/cap/day Industrial/ Commercial /Institutional (ICI): 135 L/cap/day	Residential: 210 L/cap/day  ICI: 120 L/cap/day  * Data from Environmental Services. **Note that water consumption can be dependent on weather conditions.	Residential: 204 L/cap/day ICI: 118 L/cap/day	Decrease by 8% (to 222.64 and 124.2 L)	Yes – in 2013 we had continued success at achieving and even exceeding our conservation targets.
Water Quality of Receiving Bodies  *Measurement will be defined by results from the Urban Impact Risk Assessment for AB Environment	TBD – 2015  Collection of baseline data not yet complete.	* River Monitoring started in 2012. However, it is not yet complete.	Baseline and targets will be established in 2015 in conjunction with the Urban Impact Risk Assessment for Alberta Environment.	To be set in 2015	In progress, no results until 2015.





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
ECOLOGY					
Natural Areas: Land within the city's developed area devoted to native natural features (native tree stands, wetlands, seasonal streams, grasslands, and associated biodiversity)	Total Natural Area = 863 ha	Total Natural Area = 990.06 ha	Total Natural Area =998.01 ha	Increase by 5% (to 906 ha)	Yes – continued success in 2013 - achieving and even exceeding our preservation targets.
Man Made Green Areas: land devoted to man-made natural features (city parks, turf areas shrub beds and naturalization areas)	809 ha	Total Man-Made Green Area = 838.32 ha	Total Man-Made Green Area = 847.45	Increase by 5% (to 849 ha)	Yes – on track to meet our target.
Integrated Pest Management: Volume of toxic pest control product used per acre of municipally owned land (ml/acre)	210 ml/acre	2012: 681,063 ml herbicide + 22,249 ml insecticide = 703,312 ml of toxic pest control product used	2013: 22,850 ml insecticide (20,000 ml Pounce + 2850 ml Orthene) + 799,342 ml herbicide = 822,194 ml used	Decrease by 2% (to 205.8 ml/acre)	Yes – achieved success in 2013.





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
Urban Forestry: Urban forest coverage (percentage of area within city's developed area covered by tree canopy)	TBD by 2014	703,312 ml /4,518 acres of municipally owned land (total Parks maintenance area) = 156 ml/acre  No results.	822,194 ml /4,560 acres municipally owned land (total Parks maintenance area) = 180 ml/acre  Urban Forestry Planning and Target setting is scheduled for 2014.	To be set in 2014.	Not in progress – upcoming 2014.
TRANSPORTATION					
Total Fuel (gasoline and diesel) consumption data for the city annually (Note this metric	Total gasoline and diesel consumption: 112,998,927	Total gasoline and diesel consumption: 112,727,914 litres	Total gasoline and diesel consumption: = 115,512,866 L	TBD 2013 A target is required. The following is recommended for consideration:	We collected results for 2009-2013; results were variable but overall there is a downward trend.  In 2013 we reviewed the
replaces Vehicle Kilometres Travelled (VKT) per capita/day	litres			Reduction Target (based on current downward trend) = 1156	metric and are proposing a moderate reduction target of 1156 litres of fuel per





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
by car used in 2011)				L/cap (8% by 2015)	capita for 2015.  If this targets is accepted we are on track but will have some work to do to achieve it in two years.
Modal Split: Percentage of different modes of transportation used to travel to work	Car: 88% Transit: 4% Pedestrian or Bike: 7% Other: 1%	Car: 89% Transit: 4% Pedestrian or Bike: 5% Other: 2%	*Note –most recent results are 2011 Census figures from Statistics Canada next federal census is 2016.	2016: Car: 86% Transit: 5% Pedestrian or Bike: 8% Other: 1%	Most recent census data indicates we are not on track unless we reduce our car use and increase reliance on alternative forms of transportation prior to 2016.
Dwelling Units within 400 metres of: 1) public trails, parks or other green space, 2) at least 5 basic amenities represented by commercial zoned properties or school sites*, and 3) Transit stops*	2012 served as our baseline**.  1) Public trails, parks or green space = 100%  2) Commercial zoned property = 56% and existing schools = 38%  3) Transit stops = 97%  **Baseline calculation does not include	1) Public trails, parks or other green space = 100% 2) Commercial zoned property = 56% and existing schools = 38% 3) Transit stops = 97%  Dwelling units within 400 meters	1) Public trails, parks or other green space = 100% 2) Commercial zoned property = 56% and existing schools = 38% 3) Transit stops = 97%  Dwelling units within 400 meters	<ol> <li>Public trails, parks and other green space = 100%</li> <li>Commercial zoned property = 60%, and existing schools = 45%</li> <li>Transit stops = 97%</li> </ol>	Yes – for the most part. We are achieving our target for proximity of all households to public trails, parks or green space. And achieving our target of 97% of residents with close proximity to transit routes. However, we will need to continue to work on the distance between dwelling units and commercially zoned sites





<b>EMP Metrics by</b>	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Focus Area					
Population	89,891	93,715**	97,109		
		(**no census completed so assumed 2% increase over 2011 census)			
Annual Report refinement of this metric to amenities represented by commercial and school sites and all transit stops.	residential units that are not in an urban neighbourhood. For example, Central Park is not included ***Measurement is completed as the crow flies.	of all of these parameters = 23%	of all of these parameters = 23%		and schools.
Length of bicycle/ pedestrian routes (km/capita) measured in lane kms. Includes bike routes (shared) and bike lanes (dedicated), multi-use trails (including asphalt and concrete surface trails in parks and shared trails (includes non-hard surface trails such as boardwalk, aggregate, wood chip, & pedestrian only	1 km ratio to every 672 persons (2009 Census: 89,891 persons)	Bike Lanes Shared 7.5 km Dedicated 13.6 km TOTAL 21.1km  Park Multi-Use Trails Concrete 11.5 km Asphalt 81.3 km TOTAL 92.8 km  Shared Trails Boardwalk 0.66 km Aggreg. 34.53 km Dirt 4.16 km Brick 0.14 km	Bike Lanes Shared 7.5 km Dedicated 13.6 km TOTAL 21.1km  Park Multi-Use Trails Concrete 11.7 km Asphalt 88.7 km TOTAL 100.4 km  Shared Trails Boardwalk 0.76 km Aggreg. 35.2 km Dirt 9.9 km Brick 0.38 km	Increase by 5% (to 1 km ratio to every 639 persons)	Yes – continued success in 2013 - achieving and even exceeding our targets.
** note wording and definitions refined in 2012 to ensure clarity and inclusion of trails that reflect the transportation goals of		TOTAL 39.5  Cumulative total 153.4 km  Assuming 2% increase over 2011 census for 2012 population of 93,715 Ratio =	TOTAL 46.2  Cumulative total 167.7 km  With a population of 97,109, the ratio of bike/pedestrian routes to residents is		





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
the EMP BUILT		1km:610 residents	1km: 579 residents		
ENVIRONMENT					
Our Development Footprint  "Per Capita Land Consumption" in metres squared per person  Definition: "Per Capita Land Consumption" is the total amount of land within the city that has an urban type zoning (and is or will be imminently used for urban uses) plus roads divided by the current Red Deer population. Note: This metric replaced Development Density in Council's approval of 2012 Annual Report.	Baseline (2011) 740.8 m²/person Figure broken into land use categories: -Commercial: 40.7 m²/person -Industrial: 96.2 m²/person -Institutional: 91.0 m²/person -Parks / Open Space: 151.5 m²/person - Residential: 200.2 m²/person - Roads: 161.2 m²/person  TOTAL: 740.8 m²/person	No figures – new metric for 2013.	Figure broken into land use categories: -Commercial: 31.6 m²/person -Direct Control: 14.5 m²/person -Industrial: 103.2 m²/person -Parks /Open Space/Institutional: 204.8 m²/person -Residential: 186.7 m²/person -Roads: 156.4 m²/person  TOTAL: 696.9 m²/person	1% per year from baseline data  2015 – 4% drop from 2011 figure  711 m²/person	Yes – have already achieved our short term goal. Will need to consider medium and long term goals as well.
Community Gardens:	0.4 m2/cap	Total City managed	Total City managed	Increase to :	No Change from 2012
The land devoted to		plots:	plots:	0.5 m2/capita by 2015	Results. Meaning we have





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
community gardens and urban agriculture in area (m2/capita)	Note: This combined the total garden plot area as per the City Garden Plot Program with the raised bed garden space as per the Community Garden model (smaller, raised bed gardens that are funded by City and managed by community).	Large: 101 (12,120m2) + Med - 127 (7,620 m2) = 19,740m2  Total community partnership gardens: 71 raised beds (377m2)  Total Community Food Forest area: 0m2 (fruit trees) + 0m2 (saskatoons hedge) = 0m2  TOTAL GARDEN AREA = 19,740 + 377 = 20,117  = 20,117 m2 / 93,715 or 0.21 m2 / capita	Large: 101 (12,120m2) + Med - 127 (7,620 m2) = 19,740m2  Total community partnership gardens: 71 raised beds (377m2)  Total Community Food Forest area: 200m2 (fruit trees) +150m2(saskatoon hedge) = 350m2  TOTAL GARDEN AREA=19,740 + 377 + 350 = 20,467 m2 / 97,107 or 0.21 m2 / capita		not achieved our target yet, it is being worked on. The 2015 target is ambitious.





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
AIR		2011 0011040)			
Greenhouse Gas emissions per capita in tonnes (CO <sub>2</sub> equivalent)	Baseline 2010:  Corporate= 138,980 tCO2e or 1.55 tonnes/ person Community:TBD  ** Note there were miscalculations in the figures for the baseline as those were amended, it was determined that the 2010 actual was 138,980 not 137,000 tCO2e.	2012 Results:  Corporate= 138,036 tCO2e or 1.47 tonnes/person  Community: TBD  ** Note: there were some miscalculations in the previously reported 2012 figures the actual was 138,036 tCO2e not 145,000.	2013 Results:  Corporate= 136,401 tCO2e or 1.40 tonnes/person  Community: TBD	Corporate = 30% by 2020 and 50% by 2035 as per 2010 Corporate GHG Inventory Community: TBD	Yes, we are moving towards reduction of our corporate emissions.  Community Inventory is scheduled to occur in 2014-15.
Air Quality: maintain and lower ambient concentrations of airborne pollutants, not exceeding maximums defined by the Canada Wide Standard and AB	PM2.5: 15.9µg/m3 (2007-2009) Canada Wide Standard metrics for: Ozone:	PM2.5: 31.4 µg/m³ (2009-2011) * exceeds CWS trigger Ozone: 54.8 ppb (2009-2011)	PM2.5: 30.7 µg/m³ (2010-2012) *exceeds CWS trigger Ozone: 53.7 ppb (2010-2012)	By 2015: PM2.5: 20µg/m3 Canada Wide Standard metric Ozone: 58	Yes and No. We are meeting targets for the most part, except for Particulate Matter PM2.5. Most air quality measures are moving in the right direction towards (or already meeting) the 2015





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over	97,109		
Environment	57.5 ppb (2007- 2009)  Sulphur Dioxide SO2: 0.44 ppb (2005-2009)  Nitrogen Dioxide NO2: 12.1ppb (2005-2009)  Carbon Monoxide CO: 0.25ppm (2005- 2009)	2011 census) SO <sub>2</sub> : 0.42 ppb (2008-2012) NO <sub>2</sub> : 11.9 ppb (2008-2012)  CO: 0.19 ppm (2008-2012)	SO <sub>2</sub> : 0.31 ppb (2009-2013)  NO <sub>2</sub> : 11.2 ppb (2009-2013)  CO: 0.17 ppm (2009-2013)	SO2: 0.42 ppb  NO <sub>2</sub> : : 11.5 ppb  CO: 0.24ppm	target. Particulate matter measures are not. The increase in PM2.5 (particulate matter levels) places Red Deer at a level where the Canada Wide Standard has been exceeded and a management plan will be put into place spearheaded by AB Environment.
ENERGY					
Building Energy: Average Building Intensity	Baseline (2012) 36.6 ekWh/sq. ft.	36.6 ekWh/sq. ft	39.6 ekWh/sq. ft.	*By 2015, 5% reduction from 2012 levels. (to 34.77 ekWh/sq. ft	No.  This metric saw an increase of 8% from 2012
(equivalent KWh/sq ft and sq. m)	393.4 ekWh/sq.m.	393.4 ekWh/sq. m.	425.9 ekWh/sq. m.	and 373.73 ekWh/sq. m.)  By 2020, 20% reduction from 2012 levels. (to 29.28 ekWh/sq. ft	increase of 8% from 2012 to 2013.  We are exploring why this occurred. We know it was a cold winter and building



EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
				and 314.72 ekWh/sq. m.)  By 2035, 50% reduction from 2012 levels. (to 18.3 ekWh/sq. ft and 196.7 ekWh/sq. m.)  *Based on targets set in Environmental Master Plan Appendix E Benchmarking Tool	energy is comprised of natural gas and electricity use but to improve we really need to understand why our results are moving up and not down.
Renewable energy sources: percentage of energy utilized by The City of Red Deer that is produced through green sources (such as renewable resources and energy captured from waste)	15%	* Civic Yards vehicle wash produced and sent 6,480 kWh of power to the grid. Civic Yards solar panels generated 1,345 kWh of solar energy which was used within Building 300.  ** Data provided By Electric Light & Power.	*Civic Yards vehicle wash produced AND sent 5,940 kWh of power to the grid. Civic Yards solar panels generated 1,383 kWh of solar energy which was used within Building 300.  **Data provided by Electric Light & Power.	Increase to 30%	Yes – on track to achieve.





EMP Metrics by Focus Area	2009 Baseline	2012 Results	2013 Results	2015 Target	On Track?
Population	89,891	93,715**  (**no census completed so assumed 2% increase over 2011 census)	97,109		
WASTE					
Residential Solid Waste: total weight of solid waste generation by single- family residences (kgs / capita /year)	183 kgs / capita /year	183 kgs/capita/year (assuming 2% population growth)	180 kgs/capita/year	Decrease by 10% by 2015 (to 164.7)	On Track – however, a substantial decrease in waste generation is needed by 2015 to meet our goal.
Waste Diverted: percentage of waste diverted per year per tonne of waste land filled	10%	12%	13%	Increase to 20%	On Track – however, a substantial increase in diversion is needed by 2015 to meet our goal

#### Change proposed:

The Waste Management Master Plan (adopted in May 2013) recommended replacing the metric Residential Solid Waste: total weight of solid waste generation by single family residences (kgs / capita /year) with two more precise measures relating to amount of solid waste. Administration is recommending this change to align the two plans:

Annual kg of garbage	641 kg	635 kg	640 kg	2016 target is 550; 2020	Revised metrics per
per residential				is 450; and 2023 is 400	Waste Management
curbside account				kg	Master Plan
(amount of residential					





garbage collected curbside in the city per household per year)					
Overall per capita disposal rate (total amount of solid waste disposed at the waste management facility including residential, multi-family residential, institutional, and commercial waste measured per year per capita and excluding waste from regional customers)	Unknown	831 kg/capita	818 kg/capita	2016 target is 700; 2020 is 600; and 2023 is 500 kg	Revised metrics per Waste Management Master Plan



#### 2013 Year End Status of Actions and Initiatives of Environmental Master Plan

Having reviewed the metrics reporting at a broad level, this report also considers the actions recommended in the EMP for implementation. The table below identifies general year end status and progress of the top priority actions under the Environmental Master Plan and also the short term actions. It lists each Environmental Master Plan action while linking it to the lead Department. The table also reports on the progress or status of each action.

In total there are 116 actions defined by the Environmental Master Plan:

- 27 are immediate/top priority actions.
  - As top priority, the plan's expectation was that these actions would have been completed by the end of 2012.
- 27 are short-term actions
  - o Expected completion is by the end of 2015.
- 49 are medium-term actions
  - Expected completion is by the end of 2020.
- 13 are long-term actions
  - Anticipated completion is by the end of 2030.
  - Note: two actions have no timeline identified.

So what is held over from immediate/top priority items?

The majority of the actions, 23 of the 27, are complete or underway as of the end of 2013. In total, there are eight
actions which have been completed, including the LED street lighting replacement (completed in 2011), GHG
(corporate) inventory, infill guidelines, Waste Management Master Plan review/update, waste tipping fee review,
composting education program development, and Water and Wastewater rate structure review.

Four immedia	ate/top p	oriority a	actions	have b	een de	eferred,	placed	on hold	d due to	o various i	factors,	or are	inactive	e at t	the
current time.	As of	the end	d of 201	3, thes	e inclu	ıde: In	tegrated	Storm	Water	Managem	ent Plar	ı, Adva	anced I	Mete	ec





Infrastructure for Water metering, Advanced Metered Infrastructure for electrical metering, and exploration of District
Energy potential in high-density neighbourhoods.
In total, 27 plan actions are labelled short term priority. Between 2013 to 2015 these are being monitored with
expectation of completion by the end of 2015. At this time, all but 3 are in progress, ongoing, or completed. Additional
information can be found in <i>Table C</i> below.
For additional details around medium and longer term actions, please contact Environmental Services at the City of
Red Deer.

To summarize the most significant findings dealing with immediate/top priority actions are below:

Table B: At A Glance - Top Priority Action Progress January- December 31, 2013

		Action	Responsible Department	Description of Progress	Status
		Water (4 Top Priority actions)			
	1	Prepare an Integrated Storm Water Management Plan	Engineering	This work has been deferred due to other projects. This initiative is planned for completion in 2014.	Delayed
<b>✓</b>	2	Develop environmental standards for City buildings including water conservation measures	Public Works/ Environmental Services	Water actions under way, other actions (other environmental standards) are for future start up.	In Progress
<b>√</b>	3	Review water and wastewater rate structures, which will draw attention to the value of water.	Environmental Services	Project completed in 2012. Now being implemented.	Completed
	4	Replace water meters with Advanced Metered Infrastructure (AMI) technology in conjunction with replacement for electrical meters.	Environmental Services	Reviewing business planning strategies for future AMI implementation.	Inactive
		Ecology (3 Top Priority actions)			
<b>√</b>	5	Enhance the existing City set-back policy to include water body and ecological protection related to Environmental Reserve setbacks under the Municipal Government Act	RPC	Occurring in practice. Anticipated completion Q4 2014 or Q1 2015 by bringing forward a council policy to adopt all or part of new provincial recommendations.	In Progress
<b>✓</b>	6	Prepare and implement an Urban Forest Management	RPC	Urban Forest Management Plan is slated for	In Progress.





		Action	Responsible Department	Description of Progress	Status
		Plan		completion in 2014 (approved as part of 2014 FAR).	
<b>√</b>	7	Partner with community and development stakeholders to share ideas, explore opportunities and develop conservation tools to preserve green space such as a land conservation trust, land purchase, land swaps, tax incentives and reserve dedications.	RPC	Parks continues to work with stakeholders such as Alberta Environment, local Developers, land owners, and RDRN.	In Progress.
		Transportation (3 Top Priority actions)			
<b>√</b>	8	Incorporate high level core directions of the EMP into the Integrated Transportation/Movement Study as appropriate; Integrate sustainability principles such as active transportation.	Development Services		Completed.
<b>√</b>	9	Engage the community to participate in walkability audits in their neighbourhoods.	Engineering	In 2013, the Engineering Department worked with the Red Deer Public School Board, and the Red Deer Catholic Schools board, to select 4 schools to be a reviewed as part of a study. Focused on increasing safety for pedestrians, cyclists, and vehicles travelling to and from school, as well as decrease parking congestion, and ensuring the existing Safe Routes to School match the current needs of the students.	In Progress.
<b>√</b>	10	Partner to establish regional commuting resources such as transit services, carpooling, shuttle and emergency ride programs.	Transit	Formal agreement in now in place with Lacombe and Blackfalds. Carpool.ca being implemented.	In Progress.
<b>✓</b>	11	Partner with school boards to implement a walking school bus program to encourage students to walk to school in 3 or more schools.	Engineering	Limited interest in Red Deer from schools or the community.	Limited Progress.
		Built Environment (4 Top Priority actions)			
<b>✓</b>	12	Develop city-wide infill guidelines and standards that emphasize minimum densities, compact form and environmental design standards.	Planning Department	Neighbourhood Planning and Design Standards (NPDS) address small scale infill development.	Completed.
<b>✓</b>	13	Undertake studies of both residential and commercial/industrial density in Red Deer to establish informed baselines and goals for future density targets.	Planning Department	The NPDS establish standards which shape the pattern and form of neighbourhood development. No specific goals have been set although these documents establish the framework.	In Progress





		Action	Responsible Department	Description of Progress	Status
✓	14	Partner with a developer to identify an infill pilot project on City land to demonstrate environmental design standards.	Land & Economic Development;	Timberlands RFP (not infill but new development with high emphasis on sustainability).	In Progress.
<b>√</b>	15	Work with the community and developers to create a community garden stewardship initiative to facilitate the establishment and stewardship of additional community garden plots. Aim to introduce a new community garden each year for ten years.  Air (4 Top Priority actions)	RPC	This has been a successful program to date.	In Progress.
<b>✓</b>	16	Conduct a GHG inventory analysis, and develop a corporate GHG emissions reduction plan	Environmental Services	GHG inventory analysis report has been completed and accepted as a planning tool by City Council.	Completed
<b>√</b>	17	Identify large emitters of pollution within The City's corporate operations. Identify strategies to mitigate the effects.	Environmental Services	Recreation facilities are conducting audits/assessment. Other facilities reviewing data.	In progress.
✓	18	Develop a Climate Change Adaptation and Mitigation Plan	Environmental Services	Project is underway, part one plan adopted by Council in 2013.	In progress.
<b>✓</b>	19	Work with industries that have the most opportunity to reduce air pollution by identifying large emitters and potential strategies to mitigate their effects.	Environmental Services	Partners identified to assist and planning/scoping underway.	In progress.
		ENERGY (4 Top Priority actions)			
	20	Replace electrical meters with Advanced Metered Infrastructure (AMI) technology for both residential and Industrial, Commercial, and Institutional (ICI) customers to allow them to better track, understand and modify consumption.	EL&P		Deferred
✓	21	Expand energy efficient street light program and work towards reducing the effects of light pollution.	EL&P		Completed/ Ongoing
	22	Explore District Energy potentials in high-density neighbourhoods.	EL&P	Riverlands District Energy options seem like a leading candidate but Planning Directorate will likely lead this undertaking.	On Hold
<b>√</b>	23	Partner with renewable energy providers and community stakeholders to provide information about private renewable energy options.	EL&P	EL&P works with retailers to facilitate applications for solar installations. Red Deer's total installed solar powered sites increased from 12 to 17 in 2013. Generating capacity increased from 60.76 kW in 2012 to 66.69 kW in	Ongoing





		Action	Responsible Department	Description of Progress	Status
				2013.	
		WASTE			
		(4 Top Priority actions)			
✓	24	Update the Waste Management Master Plan	Environmental Services	Waste Management Master Plan (WWMP) approved by Council.	Completed.
✓	25	Review tipping fee structure to identify opportunities to encourage (incent) diversion	Environmental Services		Completed.
<b>√</b>	26	Create an education campaign, toolkits and pilot projects around household and community composting	Environmental Services	Program was launched in 2012 and ran very successfully again in 2013.	Completed/Ongoing.
<b>√</b>	27	Partner with developers and builders to advance recycling and diversion of construction waste on development sites	Environmental Services	Broad stakeholder consultation occurred as part of developing the WMMP, as well the plan considered construction waste diversion programs.	In Progress.



#### **Short Term Actions**

The most significant findings dealing with the 27 short term actions are summarized in *Table C* below. At this time, all only 3 are not in progress, ongoing, or completed.

Table C: At A Glance – Short Term Priority Action Progress January- December 31, 2013

		Action	Responsible Department	Description of Progress	Status
		Water (5 Short Term (by 2015) actions)			
<b>√</b>	1	Promote Naturescaping Contest	Environmental Services	Principles of naturescaping incorporated into the Healthy Yards program. Education program and were shared with the public at events such as the 2013 Home Show.	Completed.
	2	Create a rain water capture program to promote the use of rain water for irrigation, building on the success of the existing rain barrel sales program.	Environmental Services		Delayed.
<b>√</b>	3	Explore using waste water effluent for irrigation at Riverbend Golf Course.	Environmental Services	Under review.	In Progress.
<b>√</b>	4	Establish a water quality monitoring program at key points along the Red Deer River and creek tributaries to determine the city's impact, analyse the river's capacity to handle pollutants, and develop methods to mitigate impacts	Environmental Services	Draft reports for the River & Tributary Study and the WTP Residuals Study were provided to the City at end of 2013/ early 2014.	In Progress.
	5	Review the salt management plan for road maintenance with a focus on minimizing salt used	Public Works	The Salt Management that is referred to is a plan that we have had in place for a few years - plan hasn't officially been updated since 2011. We complete a questionnaire to Environment Canada on-line annually that refer to our salt management plan which is a voluntary requirement only. Our plan gets updated when time permits. Salt management is constantly on-going.	Static.
		Ecology (2 Short Term (by 2015) actions)			
✓	6	Re-evaluate storm water management policy relating to use of facilities as part of the municipal reserve requirement as outlined in the Neighbourhood Planning Guidelines	Planning Department	The Neighbourhood Planning & Design Standards (NPDS) clarify criteria for reserve dedication. SWM facilities are not listed as a suitable feature to include in MR dedication.	Completed





		Action	Responsible Department	Description of Progress	Status
<b>✓</b>	7	Continue to enforce tree planting and native species requirements for new developments through the Land Use Bylaw	RPC	Acceptable species list is provided in the Engineering Design guidelines and enforced though a variety of mechanisms related to new development.	Completed
		Transportation (1 Short Term (by 2015) action)			
<b>√</b>	8	Evaluate trails and pathways mapping and technology resources to better connect people to the parks, pathways and trails system.	Engineering	In Progress.	In Progress.
		Built Environment (3 Short Term (by 2015) actions)			
<b>√</b>	9	Update the Neighbourhood and Industrial Planning Guidelines and Standards to emphasize compact, pedestrian oriented development patterns, including increasing the minimum density for new development.	Planning Department	Completed for neighbourhoods through the adoption of the NPDS (2013). The Industrial Guidelines have not been amended, although the adoption of eco-industrial design guidelines and eco-industrial overlay district provide a strong basis for future work on industrial guidelines.	In Progress
<b>✓</b>	10	Encourage redevelopment of Brownfield sites in accordance with Greater Downtown Action Plan.	Planning Services Division	Negotiations/site preparation underway to facilitate sale of two surface parking lots that had contamination. No sales completed in 2013 but expected to occur in 2014. In Riverlands site analysis of City owned properties mostly completed with demolition of old civic yards buildings to occur in 2014.	In Progress
✓	11	Increase accessibility to locally produced food by creating a year-round Market in accordance with recommendations made in the Greater Downtown Action Plan and Community Culture Vision Plan.	RPC	Project moving forward in cooperation with Planning Services	In Progress.
		Air (1 Short Term (by 2015) action)			
<b>✓</b>	12	Establish a community idle free program	Environmental Services	Program continued in 2013 reaching out to schools, businesses, agencies, and the general public.	In Progress.
		ENERGY (3 Short Term (by 2015) actions)			
	13	Develop environmental standards for City buildings and facilities that include guidelines for increased energy conservation of buildings (directed by policy 9.13 of the MDP).	Environmental Services		Progress Unclear.
<b>✓</b>	14	Explore the potential of increasing the amount of energy captured from the City's wastewater	Environmental Services	A Cogeneration unit is installed (to convert digester gas into electricity for use in the plant). Will be initialized in Fall 2014.	In Progress





		Action	Responsible Department	Description of Progress	Status
		facilities	•		
<b>√</b>	15	Explore rate structure to promote conservation.	EL&P	New utility policy completed and approved by Council, 4002-CP, in 2013. No significant changes made to rate structure by EL&P in 2013.	Completed.
		WASTE (1 Short Term (by 2015) action)			
<b>✓</b>	16	Lobby the provincial government to develop and implement waste diversion programs	Environmental Services/ Advocacy Committee	AUMA resolution was submitted in 2013.	Completed
		CORPORATE STRATEGIES ( 11 Short Term (by 2015) actions)			
<b>√</b>	17	Identify an internal Champion. (First Steps: Work with an interdepartmental management-level group to confirm/determine the internal champion of the EMP.)	CLT	Elaine Vincent, Director of Development Services is in this role.	Completed
<b>√</b>	18	Establish an inter-departmental commitment to collaboration	Environmental Master Plan Champion		Ongoing
<b>√</b>	19	Implement the Core Direction of Encourage, Educate, Engage, Enable, and Expect	Environmental Services	This was incorporated in 2012 as part of the annual reporting/public report card.	Ongoing
<b>√</b>	20	Find Ways to Report Progress and Updates	Environmental Services	This was incorporated in 2012 as part of the annual reporting/public report card.	Ongoing
<b>√</b>	21	Advance Partnerships	Environmental Services/EAC; City Advocacy Team	Environmental Services continues its presence in the community to educate and encourage EMP implementation.  Members of Council and Administration continue to work with various community groups in the area of environmental stewardship and leadership.	Ongoing
<b>√</b>	22	Continue to engage the Environmental Advisory Committee	Environmental Services	EAC engaged through regular reporting to committee by Environmental Services	Ongoing
<b>√</b>	23	Improve existing development guidelines to reinforce environmental targets.	Planning Department	NPDG: was approved by Council October 2013.  Engineering Guidelines: the NPDG will initiate changes to the Engineering guidelines in 2014/2015.	In Progress.
<b>√</b>	24	Align corporate procedures with environmental goals	Legislative and Governance	A review of existing policies is currently underway to ensure alignment with the Governance Framework.	In Progress





		Action	Responsible Department	Description of Progress	Status
			Services		
✓	25	Embrace the Performance Benchmarking System.	All Departments, CLT	Complete and ongoing commitment to continue.	Ongoing
<b>√</b>	26	Identify the responsibility for data maintenance and monitoring	All Departments,	The 2012 Annual Report has begun to solidify these approaches.  Ongoing improvements	In Progress/ Complete
<b>√</b>	27	Commit to regular reporting back to the community, partners, and stakeholders.	Environmental Master Plan Champion	Done for 2011, 2012 and now 2013. Ongoing commitment to continue. The 2012 Annual Report has solidified these approaches. Ongoing commitment to continue.	In Progress/ Complete





#### Conclusion

This 2013 annual report details the progress made in moving us closer to our set environmental sustainability goals. We have been seeing measured achievement across all seven focus areas. In addition, based on the actions that are ongoing or underway there is solid potential for further positive results in the 2014-2015 reporting periods.

Success should also be measured in terms of promoting the Plan and widening awareness among residents and stakeholders. The participation levels in Environmental Master Plan events coordinated by staff, partners, and the Environmental Advisory Committee have led the way for increasing awareness. Recognition from AUMA in 2013 based on our EMP results reporting echoes this success.

While there is evidence that the EMP has had many achievements and many progressive aspects, there are some areas where changes and/or re-charting our course is necessary. These changes fall into three main areas:

- Need to update the Metrics/Benchmarks with regard to fuel consumption as sufficient data has now become available and data review has been conducted. A range of suggested targets can be presented to City Council for their consideration taking into account high reduction, moderate reduction, and lower reduction target options. Administration believes there is enough data to establish a moderate reduction fuel sales target/metric and will make a recommendation to Council in this regard.
- Need to confirm the benchmark and targets based on new data for building energy intensity. Administration believes it
  is appropriate to begin reporting on average building energy intensity since this data is now available and recommended
  targets were provided in the Environmental Master Plan itself once benchmarks had been collected (data is now
  available for 2013).
- Adjust the Waste metrics to align with the Waste Management Master Plan. This will add one additional metric bringing our total to 19.





#### Funding and Supporting Actions and Big Undertakings

In 2011 and 2013 special funds were approved by City of Red Deer Council for implementation of the Environmental Master Plan. These funds were from The City's four utilities and a share from the tax base. The earmarked funds jump started and then fostered plan implementation. The initial funding provided the means for several significant actions from the plan to move forward. Some of the initiatives which got under way as a result of these special funds are:

- greenhouse gas inventory analysis and development of a corporate greenhouse gas emissions reduction plan
- establishment/reaffirming of a community idle-free program (to reduce/eliminate vehicle idling)
- promotion of home energy audits and tool kits to help citizens make their homes more energy efficient (partnership with Red Deer Public Library)
- climate change adaptation and mitigation planning (partnership with ICLEI)
- developing environmental standards for City owned buildings water conservation standards component
- integrated rain water management plan including storm water management policies (in progress)
- · community residential composting education program to divert waste
- Partnerships with surrounding municipalities and local employers to establish regional community resources such as carpooling, and new transit options (partnership with Green Trip)
- Strategies to mitigate effects of large air pollution emitters within City operations/energy conservation (partnership with Municipal Climate Change Action Centre)
- Strategies to "green" the municipal fleet

With these funds, and with the support of other partners and funding, implementation of the plan is continuing, The Environmental Master Plan has successfully set a foundation for advancing environmental leadership within our city, and as this report presents, many actions are underway and several community partnerships are in place.





#### Looking Forward: 2014 and 2015

The actions we are undertaking in 2014 will continue to improve our city's environmental sustainability. In addition, those we're undertaking now and looking at in 2015 link to other initiatives such as the Integrated Movement Study and the implementation of Red Deer's Downtown Plan to ensure that we are integrating an environmental lens into our city's approach moving forward.

#### **Closing Thought**

In closing, years one to three have revealed ongoing commitment to the objectives of the plan with significant momentum in continuing to move forward. Progress has occurred both on the part of The City of Red Deer but especially on the part of citizens, key stakeholders and partners. We are building greater links and capacity in our organization and community. We continue to consider how to improve and fine tune our plan implementation and reporting. We were pleased to receive provincial recognition from AUMA for our efforts in this regard. We were equally pleased to work with so many fine agencies, organizations, and individuals in our community during 2013 to advance the Plan's goals. We will continue to collaborate and seek out new partnerships including funding support in 2014 and 2015. Since the plan was first approved in 2011 there have been many steps forward. Thank you to our Environmental Master Plan partners, the Environmental Advisory Committee, and community stakeholders for taking these steps with us, and thank you Red Deerians! Here's to our many positive changes and many more to come!

