

# SUSTAINABILITY PLAN 2011-2021





## Table of Contents

---

Message from the Chief	2
Our sustainability priorities	3
In summary: our vision for 2021	4
.....	
<b>1</b> Managing growth	<b>7</b>
<b>1.1</b> Managing growth: accommodating spatial expansion	<b>8</b>
<b>1.2</b> Managing growth: addressing strategic intensification	<b>10</b>
<b>1.3</b> Managing growth: ensuring better financial capacity	<b>12</b>
.....	
<b>2</b> Ensuring safe communities	<b>16</b>
.....	
<b>3</b> Leading in service to citizens	<b>22</b>
.....	
<b>4</b> Elevating our environmental stewardship	<b>28</b>
.....	
<b>5</b> Valuing and empowering our workforce	<b>34</b>
.....	
<b>6</b> Building service resiliency through emergency management	<b>40</b>
.....	
Appendix A: 2020 Sustainability Direction Appraisal	46
Appendix B: Emergency Response Infrastructure Investment Plan	55
Appendix C: Calgary Fire Department performance benchmarks	59

---

© 2011 The City of Calgary Fire Department

The information contained in this report is the property of The Calgary Fire Department and is copyrighted. All rights reserved. No part of this report may be reproduced in any form or by any means without the written consent of the Calgary Fire Department. The Calgary Fire Department provides this information in good faith, but provides no warranty nor accepts any liability arising from incorrect, incomplete, or misleading information or its improper use. Information is maintained on a regular basis. For more information regarding copyright or the City of Calgary Fire Department please contact [CFDStrategic@calgary.ca](mailto:CFDStrategic@calgary.ca)

# Message from the Chief

Through the direction and innovative thinking set out in this plan, we intend to establish a leadership role in sustainable development within the fire service. It represents an integrated, holistic approach to our planning and decision-making.

**Sustainability planning is not about choosing between economic, environmental and social issues. Rather, it is about making smart decisions today to achieve all three in the future. Sustainability includes short- and long-term economic success, which is essential to achieve our social and environmental objectives.**

The fire service of today is not the same as it will be in ten years. As the nature of our city and citizens change, so must our service. Demand for our services have shifted and grown in areas beyond our traditional fire suppression role. As we evolve to meet the emerging community safety demands of Calgarians, we will be looking at the broader social issues of our communities and how we can leverage our stations, firefighters and relationships with other City business units and agencies to address these needs.

As one of a few City services located in communities across Calgary, we have a strong obligation and desire to make sure we are developing our stations and conducting our operations in ways that respect and protect our environment. Our award-winning water reclamation project at our training facility is just one of dozens of ways today we are reducing our environmental impact. In the next ten years, we will lead fire services across North America in the development of programs and initiatives that will see us generating 100 per cent of the energy we use and contributing back to the grid.

As ambitious as our vision is for 2021, it does not come with an equally ambitious price tag. Instead, it is designed to reduce the burden on the mill rate and our tax-paying citizens. It identifies opportunities for us to get more from our existing resources and encourages greater collaboration with other public and private organizations. Through a predictable, consistent stream of funding, we will provide an equitable level of service to all Calgarians, whether they live in a downtown high rise or a home bordering the edge of our city. Development of our stations will match growth, contribute to the value and shape of our communities and take into account the corresponding operating funds necessary to maintain service to citizens.

By working with other City business units, all levels of government, community groups and agencies, private business and our employees, we will help shape the well being of our citizens, environment and the economy.



**Bruce Burrell**  
*Fire Chief*

# Our sustainability priorities

There are six priorities that guide the Fire Department’s sustainability planning, long- and short-term business planning and organizational decision-making. In 2008, a series of priorities were established and have since been updated to reflect Council’s Fiscal Plan for Calgary, a focus on service to citizens and the elements necessary to ensure a sound organization into the future.

This sustainability plan has been appraised using The City of Calgary’s 2020 Sustainability Direction (Appendix A), which has helped us assess the ability of the plan to advance the Triple Bottom Line policy through consideration for economic, environmental and social factors. The appraisal process involved the review and input of a cross-discipline team comprised of representatives from across the Corporation. This plan incorporates the results of their feedback, including increased opportunities for collaboration as well as strategies that reflect emerging thinking, practices and philosophies from across The City of Calgary.

This plan actively supports the long-term vision for Calgary as outlined by imagineCALGARY and the Municipal Development Plan. I am pleased to present the Fire Department’s vision for 2021 and how we intend to play a significant role in advancing Council’s commitments to Calgarians.



**Erika Hargesheimer**  
*General Manager  
 Community Services &  
 Protective Services*

## Fire Department Sustainability Priorities

Adopted in 2008	Revised for 2011	Council’s Fiscal Plan
Responding to growth	Managing growth	Managing growth Ensuring financial capacity
In the community	Ensuring safe communities	Ensuring every Calgarian lives in a safe community
Leaders in fire service	Leading in service to citizens	
Environmental stewardship	Elevating our environmental stewardship	Becoming a more effective and disciplined organization
Strengthening the workplace	Valuing and empowering our workforce	
Emergency management	Building service resiliency through emergency management	

## In summary: our vision for 2021

### 1 Managing growth

Urban intensification, regeneration and growth include a commitment to new or renewed fire and community safety services for communities.

We cooperate, collaborate and partner to secure public and private resources for capital investment, service provision and education.

We ensure long-term funding sufficiency, the optimal use of assets and the ongoing adoption of innovation through: a reserve of funds designated for the lifecycle of fire service assets; mobilization of all other sources of funds to support communities; a commitment of capital and corresponding operating resources to build and operate fire stations prior to Area Structure Plan approval; and, the adoption of all possible operational efficiencies.

### 2 Ensuring safe communities

We provide services fundamental to the quality of life of citizens by managing changing and growing demand for community safety services.

Emergency response stations and firefighters are vital elements of our neighbourhoods and contribute to the vibrant urban fabric of our communities.

We are an essential element of complete communities.

### 3 Leading in service to citizens

We leverage our experience and share our achievements and leading practices to drive the standards and measures of success for fire and community safety services.

We measure our social return on investment to understand and optimize our impact and create more value for citizens and communities.

Through collaboration with leading thinkers in the field of fire and community safety, we help drive innovation that reduces risk to lives and property and supports efficient operations.

### 4 Elevating our environmental stewardship

We measure, and seek to reduce whenever financially feasible, the carbon footprint, water use and waste of our operations and fires within our communities.

We are an energy neutral organization.

We develop partnerships for environmental safety to support a reduction in fire and hazardous materials risks.

### 5 Valuing and empowering our workforce

We fully understand and manage our human capital risk to ensure we meet the evolving service needs of our citizens.

Our employees will have the skills and knowledge to deliver a breadth of fire and community safety service to citizens through world-class training, technology and innovation.

Our management and labour work collaboratively to create a safe, engaged and sustainable workforce.

### 6 Building service resiliency through emergency management

We achieve public safety resiliency through partnerships locally, regionally, provincially, nationally and internationally.

We have a comprehensive emergency management program to ensure uninterrupted critical fire and community safety services during any large-scale emergency incident.

We contribute to the preparedness and self-activation of communities in the response to, and recovery from, large-scale disasters and emergencies.





## 1. Managing growth

Over the past 30 years, the number of our stations has increased by 54 per cent, land mass has expanded 69 per cent and our population has grown by 84 per cent.



# 1. Managing growth

## Our vision for 2021

*In 2021, we will effectively and efficiently balance the fire and community safety service requirements presented by growth. Every Calgarian will have equitable access to appropriate, affordable and acceptable fire and community safety services. Sustainable, predictable funding allows us to maintain safe equipment, apparatus and facilities to support our service to citizens.*

Urban intensification, regeneration and growth include a commitment to new or renewed fire and community safety services for communities.

We cooperate, collaborate and partner to secure public and private resources for capital investment, service provision and education.

We ensure long-term funding sufficiency, the optimal use of assets and the ongoing adoption of innovation through: a reserve of funds designated for the lifecycle of fire service assets; mobilization of all other sources of funds to support communities; a commitment of capital and corresponding operating resources to build and operate fire stations prior to Area Structure Plan approval; and, the adoption of all possible operational efficiencies.

## Our success in managing growth

### Operations

- Implementation of the first phase of a deployment strategy has optimized the placement of existing staff and apparatus within stations based on assessed levels of community risk.
- Flexible station planning has been adopted to support redeployment of apparatus to stations as necessary.
- Emergency vehicle traffic flow has been improved through use of mobile display terminals in apparatus to provide best routing information and collaboration with Transportation on traffic solutions, such as traffic light pre-emption and use of bus-only lanes.



### Funding

- Alternative financing solutions have been used, including a private-public partnership for the Louise station and use of sponsorship funding to cover 90 per cent of the program costs of our community safety programs.
- Proceeds from disposal of tangible capital assets are transferred into the Miscellaneous Capital Reserve to fund future capital asset acquisition.
- Significant Municipal Sustainability Initiative funding has been obtained to address critical asset lifecycle backlogs, including a reduction in emergency apparatus operating beyond their approved lifecycle age from 18.9 per cent in 2010 to 1.1 per cent in 2015.



# 1.1 Managing growth: accommodating spatial expansion

## Our services today

Growth of fire services has not kept pace with new community development, which is evidenced by increasing response times and growing service areas.

**Growing station service areas.** In 2010, 35.1 per cent of station districts were larger than the Calgary district average of 22.9 km<sup>2</sup> and 27 per cent were larger than the 2010 Canadian cities benchmark of 27.2 km<sup>2</sup>.

Larger service areas mean longer distances to travel to reach an emergency scene. Increased incidents, or incidents impacting high-density buildings, mean more time spent away from the station and less availability to respond to other emergencies.

**Lagging behind population growth.** The city's population grew by 19 per cent between 1990 and 2000, during which time only two fire stations were built. As the population grew another 19 per cent between 2000 and 2010, six new permanent stations were constructed in response to unaddressed growth in the 1990s and five temporary stations were constructed to support rapid new community growth in the 2000s.



**Of the seven funded permanent stations to be built between 2010 and 2014, three replace the remaining temporary stations built in the early 2000s, three address immediate service gaps in new communities and one maintains service levels in the intensified downtown core.**

Our 2011 Emergency Response Infrastructure Investment Plan (Appendix B) contains 12 unfunded stations for new communities where development has been approved or is pending: East Macleod, Providence, South East, Shepard Industrial, Shepard Residential, Belvedere, Far North West Industrial, Keystone Hills, North Annex Industrial, Northwest Residential, West Macleod and Far South East. These stations are key to allowing fire services to maintain pace with development occurring within the city. It is expected three stations – East Macleod, Shepard Industrial and Belvedere – will likely be required by 2015, and two additional locations – West Macleod and Keystone Hills – will be needed by 2017.

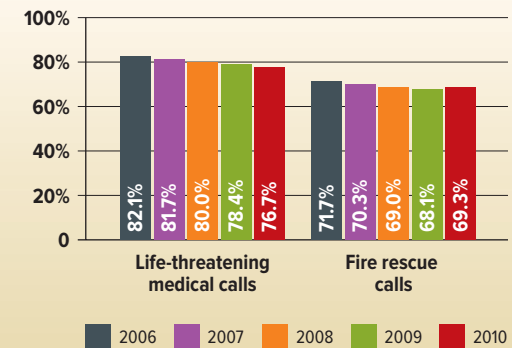
**Increasing response times.** Since 2006, performance against our travel time objective of four minutes and 30 seconds has declined for both fire rescue and life-threatening medical calls.

**First-in engine response times are an important marker of citizen safety and service. In the event of a fire, rescue or life-threatening medical call, the first engine on scene plays a critical role in initiating life-saving actions, such as providing CPR or establishing a means of access to occupants trapped in a building.**

In 2010, first-in engine travel time performance was below average in 11 of 33 station districts, or 29.7 per cent. Of these 11, eight districts extend to the outer boundaries of the city and three are within established communities.

Our travel time benchmark target for the first-in engine at a fire rescue or life-threatening medical call is four minutes and 30 seconds 90 per cent of the time. For fire rescue calls in 2006 we achieved travel time targets 71.7 per cent of the time and in 2010 we saw this slide to 69.3 per cent. For medical calls in 2006 we achieved travel time targets 82.1 per cent of the time and in 2010 this declined to 76.7 per cent.

**Chart 1: First-in Engine Travel Time Performance**



Our increased travel times are due primarily to changes in roadway configurations, increased traffic congestion and larger station service areas.



**Meeting legislated fire response times and balancing impacts on per capita costs.** The Alberta Building Code requires all homes in a municipality to be within a 10-minute fire services response zone or built with additional fire protection measures. As a result, fire services are one of the first City services to be required once new development begins in order to maintain legislative compliance.

When development has been approved before adequate fire service is in place, temporary stations are typically used. Use of these stations is not a sustainable solution as they result in suboptimal deployment of resources, are not designed for long-term flexible use and only defer costs to

the future. Temporary stations are often obtained through lease agreements with developers, and while this may defer most capital costs, we must still address the unplanned and immediate operating implications and costs that strain both our staffing levels and operating budget.

Deferrals of planned stations as a result of the need to meet legislated fire response times in areas where development has been approved ahead of emergency response station planning results in higher costs of the deferred stations due to increased construction costs. Predictable, consistent funding, such as through a capital reserve, would provide the flexibility and financial capacity we require to address these cost escalations.

City annexation poses similar risks to fire service. Existing homes within annexed areas are typically beyond our four minute and 30 second travel time objective, which poses increased risk to these citizens. Future annexation planning will need to continue to take into account the costs of providing adequate fire service to these new areas.

**As stations are placed into communities with lower populations, the result is an overall increase in the cost per capita for fire services in Calgary. Costs per capita have increased 24.3 per cent since 2008 to \$132.51 in 2010.**

## 1.2 Managing growth: addressing strategic intensification

### Our services today

As we work to catch up with new community growth from the last decade, increased emphasis on more balanced growth and a compact urban form – as outlined within the Municipal Development Plan and Strategic Framework for Growth and Change – requires consideration for appropriate and supporting fire service.

Within Calgary, we typically experience 44 incidents per 1,000 citizens, which means with future Intensification efforts we expect a larger number of incidents in more heavily populated, smaller areas.

**Increasing populations served per station.** In 2010, 56.8 per cent of station districts had a higher ratio of firefighters to population than the district average of 1:1,305. The ratio for the total number of firefighters to population was comparable to other Canadian cities at 1:874. In many cases, current station and staffing configurations are not designed to support increased populations in established areas and must be renovated or replaced to provide an appropriate level of service.



**Competing with new growth projects.** Four stations in established communities are designated for regeneration or replacement in the next decade to accommodate for intensified populations. Two stations are currently funded while two that provide service to existing northwest Calgary communities are unfunded.

Thirty-six per cent of our owned facilities were constructed before 1979. All of these stations are in established neighbourhoods and will be due for replacement between 2025 and 2030. Between 2011 and 2021, we will be determining the optimal locations for these lifecycle facilities to manage land acquisitions and identify potential collaboration with other City business units.

Deferral of these capital costs often have an adverse effect on operating costs, as our older facilities require more general repairs and maintenance or may not be as energy efficient as newer facilities.



**Table 1: Fire Department Owned Facilities**

Year of Construction	Number of Facilities	% of Total Owned Facilities
1979 and older	15	36
1980-1989	11	26
1990-1999	3	7
2000-2010	13	31

**Increasing times to assemble minimum resource levels.**

Since 2006, we have seen a decline in our ability to assemble a full first alarm for a fire suppression incident.

**Assembling a full first alarm, which means amassing 14 firefighters at a fire scene, is vital to allowing firefighters to safely, adequately and properly attack and extinguish a fire.**

Our benchmark travel time target is eight minutes and 30 seconds 90 per cent of the time for a full first alarm assignment of 14 firefighters to a fire suppression. In 2006, we did this 65.1 per cent of the time and in 2010 we saw a decline to 56.9 per cent.

As the area, number of incidents and populations covered by a fire station increases, so does the time in which firefighters can amass for response to a fire. In addition, incidents involving high-density buildings mean longer vertical distances to travel to reach an emergency scene, adding to response time pressures.

**Declining benchmark performance.** When we set our benchmark performance targets (Appendix C) with City Council in 2008, the intent was to allow for gradual, annual improvement towards achieving our targets.

**In the Fire Department's eight benchmarks related to emergency response times, performance has declined in six of these areas over the past five years.**



# 1.3 Managing growth: ensuring better financial capacity

## Our services today

We have benefited from City Council approval of \$200 million in Municipal Sustainability Initiative funding in 2008, which addressed significant aging apparatus and facility issues. Looking ahead, we need to adopt financial practices that allow us to create predictable, consistent funding that supports ongoing renewal and growth of necessary infrastructure.

**Controlling operating costs.** Ninety per cent of our operating costs are directed to salaries and wages and are non-discretionary. As a result, budget reductions impact staff and service levels; however, our deployment strategies and the vision outlined in the *Ensuring Safe Communities* section of this plan will fully optimize our workforce in delivering community safety to Calgarians.

While only five per cent of our operating budget is derived from external revenues and inter-business unit recoveries, we will consider opportunities to enhance our long-term recovery rates and expand our funding sources through initiatives such as private-public partnerships and sponsorships to reduce our mill-rate reliance.

**Operating cost of capital growth.** Once station funding is approved through the capital budget process, operating costs for staff and equipment to support the station are approved in future budget cycles, typically two to three years after capital approval.

In order to sustain the cost of growth, operating costs will also increase, which includes frontline staff and associated support such as additional maintenance, technology, utilities and materials. An estimated additional \$84 million in operating costs will be incurred to fund future growth and station regeneration in intensified areas through to 2021.

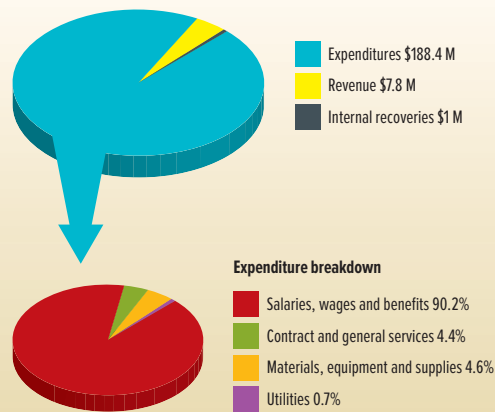
Without operating funding, stations will not open to serve developing communities and intensification needs will not be met.

**Recovering costs of stations in new communities.** The Community Recreation Levy (CRL) contribution from the Urban Development Institute is estimated to provide only 80 per cent of the cost of construction of stations in new communities. This funding does not include operating or lifecycle costs, and does not apply to stations in established areas experiencing intensification, which must be wholly supported by municipal capital funding. Sufficient, available funding, such as through a capital reserve, is required to cover the gap between CRL funds and actual station costs as well as to provide for future lifecycle costs.

**Developing predictable capital funding.** Our capital budget has not had a sustainable source of ongoing funding. The majority of funding for our infrastructure projects has originated primarily from grants from other levels of government to The City of Calgary, which is an unpredictable and inconsistent source of funds and limits our long-term planning ability and sustainability.

Our infrastructure base is comprised primarily of critical assets that directly support frontline emergency response.

**Chart 2: 2011 Gross Operating Budget**



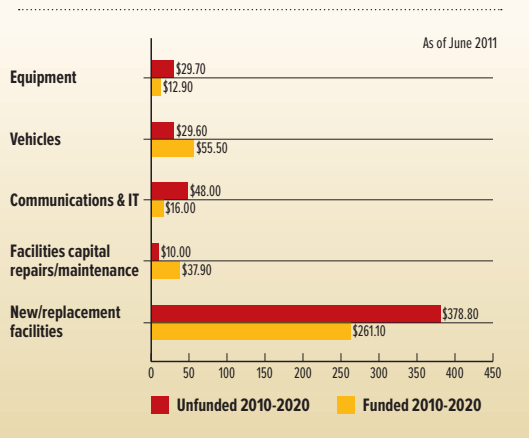
**Chart 3: Total Approved Capital Funding by Source, 2005-2010**



**Table 2: Tangible Capital Asset Opening Balance (December 31, 2009)**

Asset	Quantity	% of Cost	% of Items	2009 Estimated Replacement Cost (millions)
Vehicles	167	22.5	0.6	\$54,339
Fire equipment	20,127	8.9	74.4	\$17,547
Other equipment	3,865	3.7	14.3	\$7,938
Communications and IT	2,764	2.3	10.2	\$4,641
Buildings	34	57.4	0.1	\$194,242
Land and land improvement	99	5.2	0.4	\$16,152
<b>Totals</b>	<b>27,057</b>	<b>100</b>	<b>100</b>	<b>\$294,958</b>

**Chart 4: Fire Department Capital Investment 2005-2021 (in millions)**



**Table 3: Average Allocation of Annual Lifecycle Funding**

Asset	% of Lifecycle Funds
Fleet	53
Personal protective equipment	18
Facilities	15
Communication equipment	8
Equipment	6

We require consistent, ongoing investment in infrastructure to replace aging facilities, fire equipment and apparatus to maintain items within their recommended and approved lifecycle requirements. Forecasted development and growth will add to the total inventory required to maintain appropriate levels of service.

Our average annual lifecycle funding requirements equate to about 4.5 per cent of the total estimated replacement cost of our assets, with our fleet comprising over 50 per cent of our annual lifecycle costs. Facilities require about 15 per cent of our annual lifecycle funding and CRL funding does not provide consideration for these costs.

**Sustainability Challenge in Profile: Emergency Apparatus**

**Following the end of Municipal Sustainability Investment funding in 2015, it is estimated that five per cent of emergency apparatus are due for replacement beginning in 2016, followed by an additional 16 per cent between 2017 and 2020. The average estimated replacement costs for apparatus between 2016 and 2020 alone is \$19.7 million**

**A robust replacement plan funded through a sustainable capital reserve would help ensure emergency vehicles are replaced at the end of their lifecycle.**

Lack of sustainable capital funding means our assets are acquired or replaced as funding comes available. This results in peaks and valleys in asset acquisitions that result in service delivery impacts and ongoing future peaks and valleys in asset replacement needs.

# 1. Managing growth: targets and strategies

Visions	2021 Targets	Strategies
<p><b>1.</b> Urban intensification, regeneration and growth include a commitment to new or renewed fire services for communities.</p>	<p>Emergency response performance is maintained or improved.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Develop a collaborative, predictive planning model to forecast future demand for service resulting from both intensification and new community growth.</li> <li><b>B.</b> Align planning and funding decisions with direction established by the Municipal Development Plan and consistent with the Strategic Framework for Growth and Change.</li> <li><b>C.</b> Adopt technology and process innovations that improve service delivery and public safety.</li> <li><b>D.</b> Optimize service planning to ensure the most efficient, effective use of resources based on community and city risk.</li> </ul>
<p><b>2.</b> We cooperate, collaborate and partner to secure public and private resources for capital investment, service provision and education.</p>	<p>Regional servicing and initiatives will operate on a full cost recovery or revenue generation model.</p> <p>A minimum of \$2 million in sponsorship funding will be obtained.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Explore regional servicing models that reduce service redundancy, maximize use of resources and demonstrate financial feasibility.</li> <li><b>B.</b> Investigate a comprehensive organizational sponsorship and partnership strategy to engage the private sector and other levels of government in funding of public safety infrastructure, programs and initiatives.</li> <li><b>C.</b> Explore internal corporate servicing models that offer opportunity, reduce redundancy, maximize use of resources and enhance financial capacity.</li> </ul>
<p><b>3.</b> We ensure long-term funding sufficiency, the optimal use of assets and the ongoing adoption of innovation through: a reserve of funds designated for the lifecycle of fire service assets; mobilization of all other sources of funds to support communities; a commitment of capital and corresponding operating resources to build and operate fire stations prior to Area Structure Plan approval; and, the adoption of all possible operational efficiencies.</p>	<p>By 2015, an annual capital lifecycle reserve will be secured to sustain fleet, equipment and facilities within lifecycle guidelines.</p> <p>Lifecycle for safety and specialized equipment will be maintained in keeping with legislated and industry standards.</p> <p>Operating expenses for new stations are approved at the same time capital is approved for station funding.</p> <p>The recovery rate on user fees is at least 100 per cent of costs.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Create a sustainable reserve for lifecycle needs.</li> <li><b>B.</b> Develop asset management strategies that optimize whole life costs and value to citizens.</li> <li><b>C.</b> Explore options for securing approval of corresponding operating budget when capital funding for stations is approved.</li> <li><b>D.</b> Determine the complete costs of all services provided to support full cost recovery of services where appropriate.</li> <li><b>E.</b> Develop and implement a plan to increase the long-term recovery rate on costs for fire safety and inspection business licensing (new and renewal).</li> </ul>





The Louise station, opened in 2010, is the only permanent station to be built between 2010 and 2014 that addresses intensification.



## 2. Ensuring safe communities

Today, we reach one in ten Calgarians through our public safety programs and education initiatives.

## 2. Ensuring safe communities

### Our vision for 2021

*In 2021, every Calgarian will live in a safe community. Our programs and services will reflect the growing and changing community safety demands of our citizens, and will be tailored to the risk, diversity and needs of each community. Stations and firefighters are core to our communities and are key to delivering programs, services and education that enhance the health, safety and preparedness of our citizens. We support business in our city by ensuring safe facilities and practices that mitigate risk to their employees and our citizens.*

We provide services fundamental to the quality of life of citizens by managing changing and growing demand for community safety services.

Emergency response stations and firefighters are vital elements of our neighbourhoods and contribute to the vibrant urban fabric of our communities.

We are an essential element of complete communities.

### Our success in ensuring safe communities

- A dedicated fire urban planner and technical review team ensure fire codes, fire service requirements and safety perspectives are considered in Area Structure Plans, development and building permits.
- Ninety-eight per cent of inspections are completed within 14 days to expedite the development and building process and ensure occupant safety.
- New stations are built to be adaptable and include room for additional apparatus to support flexible deployment of our staff and fleet.
- Three multi-service stations in Saddle Ridge, Midnapore and Country Hills have been constructed to support the grouping of protective and community services.
- Risk assessments have been completed on every Calgary community to determine the nature and likelihood of fire and injury risk to residents.



## 2. Ensuring safe communities

### Our services today

Demand for fire and community safety services have steadily increased over the past decade as our population has increased. While the success of our prevention activities, including our advocacy to improve building code safety requirements, has contributed to a 22.4 per cent decline in fires over the past five years, we have seen a growing need for our service in other areas vital to the safety of our environment and communities.

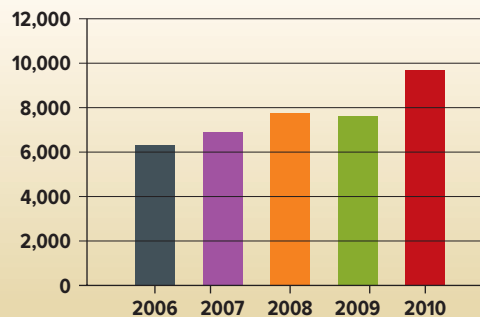
#### **Adapting to changing and increasing demand.**

Our core services include fire, rescue and emergency medical response, community safety education and programs, inspections and investigations. The demand for services within these areas has changed as needs of our citizens have evolved over the years.

While the numbers of fires have declined in the past five years, medical calls have increased almost 17 per cent to make up 46.7 per cent of our calls in 2010. Our community safety role has expanded as demonstrated by our non-emergency calls – such as hazardous conditions, public service assistance, investigations and non-life threatening medical and rescue incidents – which have increased 55 per cent over the past five years and contributed to 20.4 per cent of calls in 2010.

**We expect to see the nature of community safety demands continue to change. We will engage our citizens to determine where gaps in the safety network exist so we can adapt our service to meet these developing needs.**

**Chart 5: Non-emergency Incidents**



As the social fabric of our citizens and communities also change, we are adapting our services, education and approaches to reflect these shifts. Through our risk assessment process, we recognize each community has a unique set of risks resulting from its infrastructure, business and industrial areas, demographics and geography. As a sustainable organization, we will tailor our programs and initiatives to the individualized risk of each community to ensure the most effective, efficient use of our resources and provide our outreach support where it is most needed.

As citizen use of social media and online communities continues to grow, we can leverage these technologies to efficiently expand our outreach and education efforts and provide real-time emergency communications to those impacted by incidents in their communities.

With 23 per cent of Calgarians speaking a primary language other than English or French, we will adapt our communications and education to better reflect the culture, practices and languages of all of our citizens.

**Ingraining fire and community safety service into communities.** Our firefighters deliver community health and safety programs, such as free blood pressure and cholesterol testing, from stations across the city.

**With greater emphasis placed on complete communities through the Municipal Development Plan, we see opportunities to redefine the role of emergency response stations and firefighters.**

By collaborating with other city services, agencies and private industry, our stations can be integrated with surrounding development, merged with other services and created as public spaces that support a broader focus on community health, safety and preparedness.

In partnership with our community safety officers, our firefighters will be essential in helping further this enhanced community involvement and presence. We will build on their position in neighbourhoods across Calgary to deliver an expanded array of community safety services and establish grassroots outreach initiatives. Through their close ties to the communities they serve, firefighters will engage area residents, businesses and agencies in preparing and educating others on ways to reduce risk, bolster resiliency and foster self-sufficiency.

**Supporting complete communities and urban planning.**

While we have expanded our involvement in municipal urban planning, we believe we can further evolve our role to encourage additional innovation in community, transportation and building design to further enhance public safety. Through earlier involvement in the planning process, we can contribute to the creation of communities where safety risks of current and planned infrastructure and use patterns are understood and emergency response is considered earlier when more affordable and effective options are available to provide fire service.

We will broaden our relationship with business units responsible for land use, infrastructure and mobility planning to contribute an emergency services perspective to the planning process. Through these relationships, we can also identify opportunities to modify our infrastructure and operations to better support complete community and street concepts. We will also partner with other City services facing similar operational issues, such as Transit and the Calgary Police Service, to develop community and mobility planning solutions that address multiple needs.



## 2. Ensuring safe communities: targets and strategies

Visions	2021 Targets	Strategies
<p><b>4.</b> We provide services fundamental to the quality of life of citizens by managing changing and growing demand for community safety services.</p>	<p>Technologies will be in place to provide real-time integration and reporting of community safety information for service delivery.</p> <p>More than 95 per cent of Calgarians are satisfied with our services.</p> <p>There will be one community safety officer per 50,000 citizens.</p> <p>There will be one fire inspection and enforcement staff per 15,000 citizens.</p>	<p><b>A.</b> Establish the Fire Department as a national leader in medical first response and community safety practice.</p> <p><b>B.</b> Leverage risk-based community assessments, including those across City business units, to drive resourcing and outreach activities and inform communities of their level of risk to encourage resiliency and preparedness.</p> <p><b>B.</b> Deliver on-scene and emergency communications as well as prevention education in the languages and methods used by citizens every day.</p> <p><b>D.</b> Engage a diverse range of citizens in the evaluation of programs and services and identification of community safety concerns.</p>
<p><b>5.</b> Emergency response stations and firefighters are vital elements of our neighbourhoods and contribute to the vibrant urban fabric of our communities.</p>	<p>A service model will be in place where frontline firefighters will be dedicated to enhancing the resiliency of our communities.</p>	<p><b>A.</b> Establish emergency response stations as a central hub of health, safety and prevention activities in the community.</p> <p><b>B.</b> Integrate frontline firefighters into the delivery of preparedness and prevention education to build organizational capacity, encourage community resiliency and foster increased well-being.</p> <p><b>C.</b> Mobilize community leadership and participation in delivering fire and community safety prevention and education initiatives.</p>
<p><b>6.</b> We are an essential element of complete communities.</p>	<p>Plans for all new and redeveloped communities will include community services infrastructure that accommodates the diverse social, recreation and public safety needs of residents.</p>	<p><b>A.</b> Establish a public safety role in urban planning at municipal, national and international levels.</p> <p><b>B.</b> Adopt infrastructure and practices that balance public safety demands with complete community concepts, like complete streets and transit-oriented development.</p> <p><b>C.</b> Support safe business growth and development through a streamlined and simplified the inspection and plan review process.</p>



Programs dedicated to assisting victims of fires, including our After the Emergency program, aim to educate, assist and reassure citizens following a fire in their community.



### 3. Leading in service to citizens

The Fire Department advocated for the 2006 changes to the Alberta Building and Fire Codes, which help minimize the severity, frequency and damage caused by fire.



### 3. Leading in service to citizens

#### Our vision for 2021

*In 2021, we have clearly demonstrated the life and safety outcomes, value and efficiency of our service. The means by which fire and community safety service is evaluated reflects the differences we have made in the quality of our citizens' lives, our communities and the social fabric of our city. Our commitment to sound science and research will help reduce fire and community safety risks in Calgary. It will also empower us to effectively advocate for changes to legislation and practices that result in safer infrastructure and buildings in our city.*

We leverage our experience and share our achievements and leading practices to drive the standards and measures of success for fire and community safety services.

We measure our social return on investment to understand and optimize our impact and create more value for citizens and communities.

Through collaboration with leading thinkers in the field of fire and community safety, we help drive innovation that reduces risk to lives and property and supports efficient operations.

#### Our success in leading in service to citizens

- As a board member for the Centre for Public Safety Excellence, the fire chief is helping shape fire industry standards.
- Fire Department members sit on provincial and national fire and building codes boards to represent community safety concerns.
- The Fire Department participates in numerous multi-agency projects aimed at enhancing community safety, including:
  - Public Safety Task Team to inspect licensed establishments and special events
  - Safe Housing Inspection Program to ensure the safety of rooming houses
  - Secondary suites inspection team to assess suites for code compliance



### 3. Leading in service to citizens

#### Our services today

As a leader in our industry, it is our responsibility to ensure we are operating as efficiently and effectively as possible. To truly deliver on these objectives, and further enhance our sustainability, we strive to leverage leading-edge knowledge and practices as well as the resources available within our communities.

#### **Redefining the measures of fire service success.**

Our performance is regularly assessed against 18 Council-approved benchmarks tailored to Calgary's unique characteristics as well as the standards of other national and international agencies. The measures used are often inconsistent and results are dependent on the auditing agency standards. These measures, while helpful in assessing aspects of our city's fire response ability, are narrow in focus and do not account for public safety outcomes, the breadth of our services or efficiencies in our operations. As a sustainable organization, we need to move towards a more holistic approach to assessing our operations, impact and financial responsibility. As a fire services leader, we will work to influence change to national and international standards to support a more comprehensive perspective of fire services.

**Our accreditation through the Centre for Public Safety Excellence as well as The City of Calgary's Fire Underwriters' Survey grading rely heavily on our ability to effectively address both spatial expansion and intensification issues.**

**Continued performance declines in these areas will result in withdrawal of accredited status and higher property insurance premiums for both business and residents.**

**Optimizing value to citizens.** Our future measures also need to include our social, environmental and economic outcomes to provide a true picture of our value to citizens. This social return on investment will be an increasingly important element in helping assess our true impact on the regeneration, health and vitality of our communities, particularly as we adapt our operations to the evolving community safety services of our citizens.

We will seek to better understand how the cost of our services supports the reduction of other costs, such as

health care, to our citizens and communities. We will also examine ways in which we can quantify and evaluate the less tangible aspects of our service, such as the sense of safety and well being that results from the presence of emergency services in a community.

Our value will be enhanced by looking more broadly at the types of safety issues impacting our communities and continuing to expand our collaboration with other city services and agencies to develop complete solutions.



**Driving innovation in community safety.** We have been a strong advocate for changes to building and fire codes that encourage practices and materials that improve the safety of infrastructure in our city. We will strengthen our voice by bringing together like-minded services across Alberta and Canada to provide a unified voice for public safety considerations in codes and legislation.

Our advocacy will be further strengthened through science and research aimed at reducing fire and risk as well as improving response practices. We will seek partnerships that leverage the research and knowledge of other fire services, industry and post-secondary institutions to identify new practices that make our homes and businesses safer while streamlining our operations to make us as efficient and cost effective as possible. By harnessing this collaborative intelligence, we can move from incremental improvements in safety to fundamental changes in the livelihood and protection of our citizens.

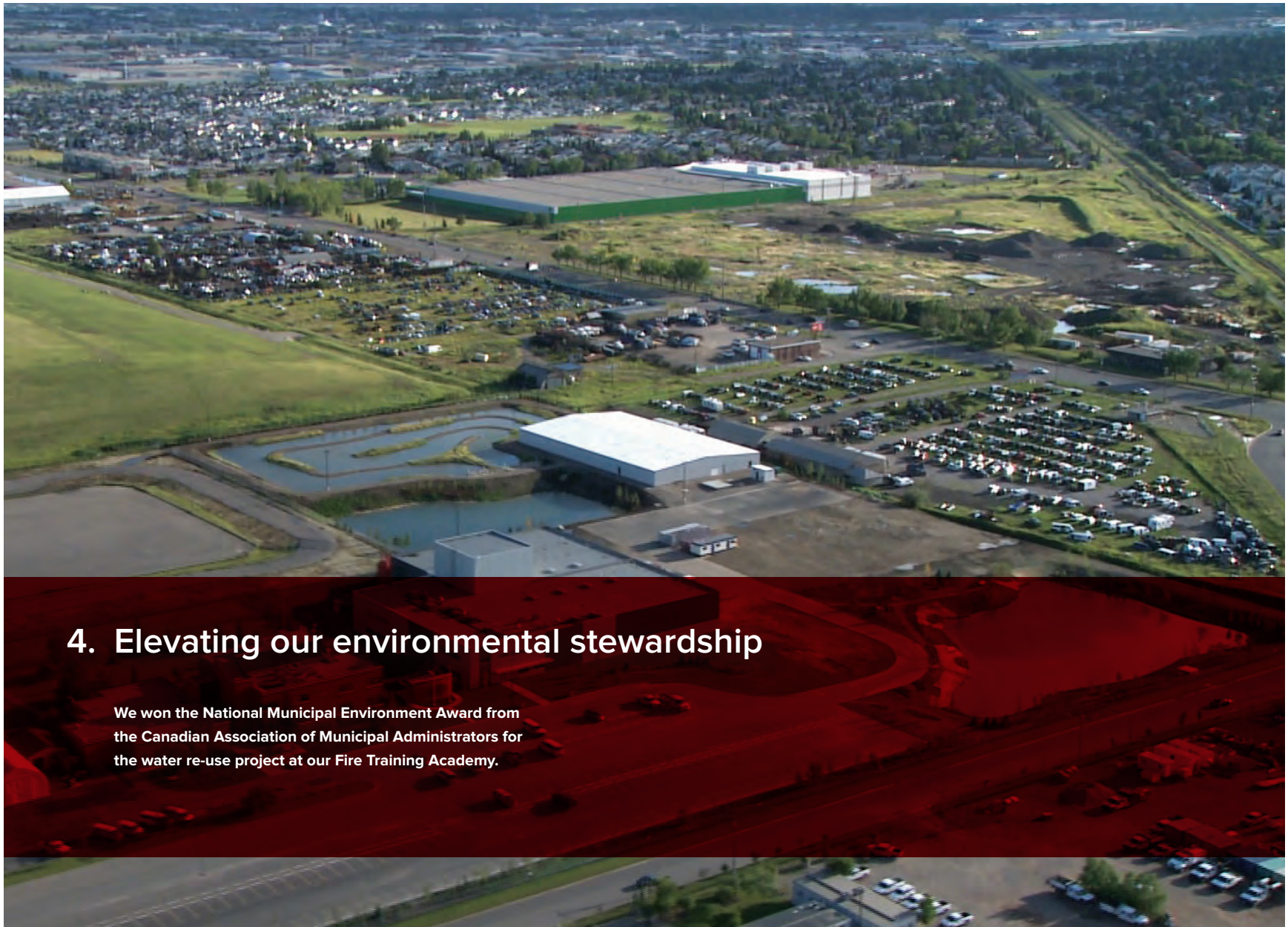


### 3. Leading in service to citizens: targets and strategies

Visions	2021 Targets	Strategies
<p><b>7.</b> We leverage our experience and share our achievements and leading practices to drive the standards and measures of success for fire and community safety services.</p>	<p>We will meet or exceed average performance of comparable national and international municipalities for both efficiency and effectiveness.</p> <p>We will influence the Centre for Public Safety Excellence and Fire Underwriters' Survey to include outcome-based measures as part of their performance assessment process.</p>	<p><b>A.</b> Lead advocacy efforts at national and international levels to encourage consistency in standards across agencies and influence the measures and standards used to reflect public safety outcomes.</p> <p><b>B.</b> Integrate outcome- and efficiency-based measures into Fire Department performance benchmarks for consideration by City Council.</p>
<p><b>8.</b> We measure our social return on investment to understand and optimize our impact and create more value for citizens and communities.</p>	<p>We will submit community safety financial proxies for inclusion in the Social Return On Investment Canada Financial Proxies Database.</p>	<p><b>A.</b> Lead collaboration of cross-departmental, community and private sector organizations to holistically address key public safety issues.</p> <p><b>B.</b> Enhance transparency and accountability to citizens through effective, efficient and convenient access to Fire Department planning, performance reporting and use of funding.</p> <p><b>C.</b> Measure contribution to social return on investment of the services provided by the Fire Department (i.e. cholesterol/blood pressure program, Household Hazardous Waste program)</p>
<p><b>9.</b> Through collaboration with leading thinkers in the field of fire and community safety, we help drive innovation that reduces risk to lives and property and supports efficient operations.</p>	<p>At least one formal relationship will be established with a research institution.</p>	<p><b>A.</b> Cultivate and leverage science and research that reduces fire and risk in communities.</p> <p><b>B.</b> Lead advocacy efforts to insurance companies that compensate citizens and communities for adopting practices and materials that reduce fire risk.</p> <p><b>C.</b> Influence changes to Alberta and National Fire Building Codes to advance public safety.</p>



Collaboration with other City business units will be vital to our success in measuring our social return on investment and helping address social and safety issues in our communities.



## 4. Elevating our environmental stewardship

We won the National Municipal Environment Award from the Canadian Association of Municipal Administrators for the water re-use project at our Fire Training Academy.

## 4. Elevating our environmental stewardship

### Our vision for 2021

*In 2021, we meet or exceed global benchmarks for environmental management in fire services and have minimized our environmental footprint through innovative practices and collaboration. From a community perspective, we reduce risks to the health, safety and protection of our waterways, land and air by pioneering safe management practices for hazardous materials in our homes and businesses. Our environmental leadership role is the result of pursuing opportunities that demonstrate a sound balance between environmental benefit and economic sensibility.*

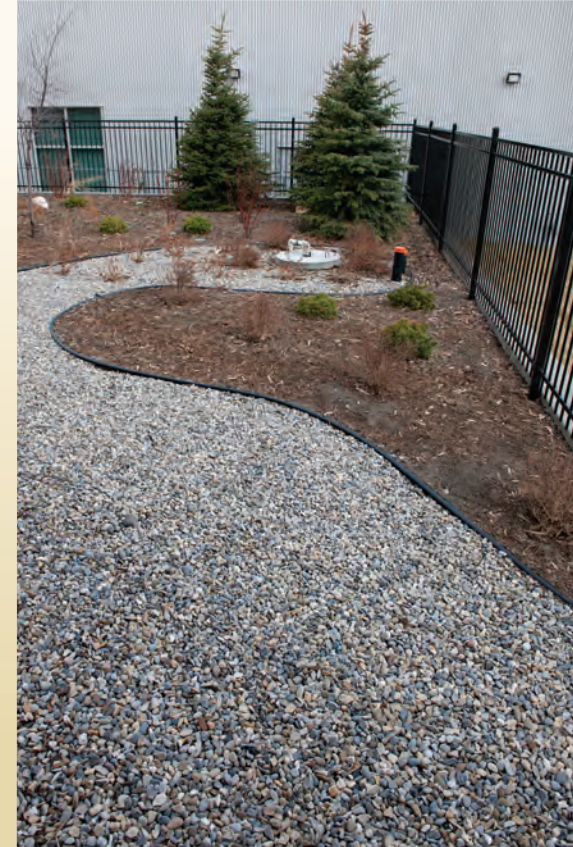
We measure, and seek to reduce whenever financially feasible, the carbon footprint, water use and waste of our operations and fires within our communities.

We are an energy neutral organization.

We develop partnerships for environmental safety to support a reduction in fire and hazardous materials risks and the impact of climate-related hazards and events.

### Our success in elevating our environmental stewardship

- In partnership with Waste & Recycling Services, the Household Hazardous Waste program available through five stations diverts over three million kilograms of waste chemicals, oils and flammable liquids from Calgary landfills annually.
- Through collaboration with Parks on a water reclamation initiative at the Fire Training Academy, over one million gallons of water from training exercises is recycled each year.
- Fire Department facilities recycle 52 per cent of waste.
- Water use in emergency response stations has been reduced by 32 per cent, already achieving our goal of a 30 per cent reduction by 2030.
- Where financially feasible, all new and renovated facilities are constructed to a Leadership in Energy and Environmental Design (LEED) Gold standard.
- The use of foam at certain types of fires cuts suppression times in half and reduces water use by as much as two-thirds.
- The Vital Industrial Information Program and Safe Industrial Inspection Program promote safe practices in industrial and other occupancies that pose a significant safety hazard of environmental risk.



## 4. Elevating our environmental stewardship

### Our services today

As an ISO 14001 compliant organization, we meet or exceed the requirements for an environmental management system and aim to conduct our operations in an environmentally sustainable manner. Our success to date has been significant, but our future sustainability, and that of our city, will require us to further refine our processes, infrastructure and operations in light of environmental considerations.

#### **Measuring and monitoring our environmental impact.**

Through our many environmental initiatives, we have established effective measures of the impact of individual programs and projects as well as our overall fuel, electricity and natural gas use. We will leverage this work to establish department-wide environmental targets in our performance measurement and management system.

Through implementation of the Corporate Energy and Environmental Information System, we will be able to accurately assess the effectiveness and efficiencies realized through our future environmental improvements.

**Reducing our environmental footprint.** With over 40 facilities and over 90 emergency apparatus in operation across the city, strong environmental management begins with the design of our stations and extends to our operations and fleet.

Our station planning process takes into account opportunities to share facilities with other city services. In keeping with both the complete communities concept and environmental importance, our future planning process will be expanded to consider shared facilities with other community and private sector organizations.

**Land.** The primary factor in determining a station location is its ability to meet emergency response needs, which means we consider brownfields and greenfields as well as sites located near major transit and roadway networks.

To protect our communities from pollutants, our stations use non-chemical pest control. In addition, the recycling program in our facilities is being expanded to include organics.

**Air.** Over the past several years as our light fleet has reached end of lifecycle, the vehicles have been replaced with smaller, more fuel-efficient models to reduce emissions. We provide emergency response to meet the level of risk in a community, and we are committed to the rightsizing of our emergency apparatus to ensure we are appropriately and effectively addressing these risks. As alternative fuel options continue to be adapted for Calgary's climate and emergency response apparatus, we will explore fleet strategies that help us reduce emissions as much as possible.

In 2011, we are piloting solar photovoltaic electrical generational panels on four of our stations to allow each station to generate its own energy. Our intent is to move to solar-generated electricity for all of our stations and return excess energy back to the grid.

**Water.** Water is a critical element in our firefighting operations, and we strive to find ways to reduce our use and ensure the quality of this important resource. Our hydrant testing has been adapted to reduce water use and ensure contaminants do not enter the sewer system. We use equipment that adjusts water volume and pressure and requires less water for cleaning and maintenance.

To further reduce our reliance on potable water sources, we are looking for ways to better match water quality with the type of activity for which it is used. Additional options for water sources to support our firefighting efforts may be possible, and we will explore these opportunities without compromising on the most vital commitment we have – protecting the safety of our citizens.

All of our new stations are xeriscaped to reduce water requirements for landscaping. Graywater harvesting is currently in use at five stations with intent to expand use to all new and some existing stations.





**A Solution for Safety and the Environment:**

**In addition to improving citizen and community safety, residential fire sprinklers can reduce water used in firefighting operations from 3,524 gallons used by firefighters to 280 gallons used by sprinklers.**

**Minimizing the risk and impact of incidents on the environment.** As a result of the reduction in the number of fires in Calgary, we have contributed to the associated reduction in carbon dioxide emissions, the use of water for firefighting and the disposal of waste and heavy metals into landfills during site cleanup. Through the future adoption of the Energy and Environmental Information System, we will explore how to better quantify and measure these reductions.

Over the past five years, the numbers of hazardous condition calls has increased almost 38 per cent, and our response to these releases, leaks and spills make up just over 15 per cent of our total annual calls.

Through programs targeted at industrial and other occupancies that pose a significant safety hazard or environmental risk, we collect hazardous materials data on these facilities to help us prepare appropriate emergency responses. To further mitigate the risk to the environment and community, we will integrate this information with the mobile computing terminals in our fire apparatus to provide real-time hazardous materials information to fire crews on the risks associated with industrial and commercial facilities to which they are responding.

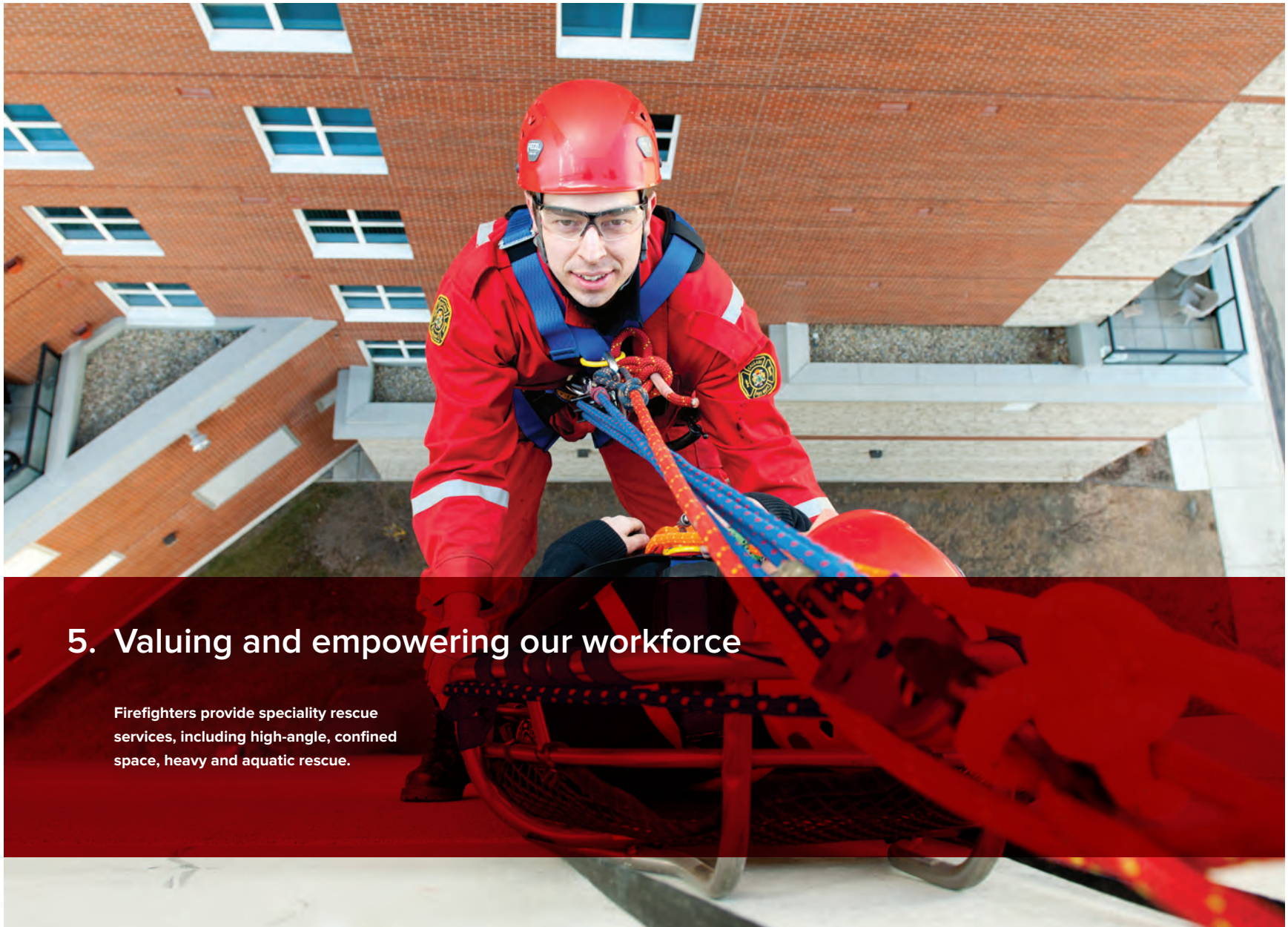


## 4. Elevating our environmental stewardship: **targets and strategies**

Visions	2021 Targets	Strategies
<p><b>10.</b> We measure, and seek to reduce whenever financially feasible, the carbon footprint, water use and waste of our operations and fires within our communities.</p>	<p>Eighty per cent of our waste will be diverted from City-run landfills.</p> <p>Greenhouse gas emissions will be reduced by 20 per cent from the 2005 baseline.</p>	<p><b>A.</b> Develop an air emissions reduction strategy, including a framework for measurement using the Corporate Energy and Environmental Information System.</p> <p><b>B.</b> Reduce reliance on the potable water supply.</p> <p><b>C.</b> Develop an environmental sustainability plan.</p>
<p><b>11.</b> We are an energy neutral organization.</p>	<p>Fire Department facilities generate 100 per cent of the energy they consume.</p>	<p><b>A.</b> Assist the Corporation in leveraging carbon finance.</p> <p><b>B.</b> Implement the Corporate Energy and Environmental Information System for monitoring, planning and forecasting.</p> <p><b>C.</b> Provide all station electricity through renewable sources, such as solar generation or wind.</p>
<p><b>12.</b> We develop partnerships for environmental safety to support a reduction in fire and hazardous materials risks and the impact of climate-related hazards and events.</p>	<p>At least 4.5 million kilograms of household hazardous waste will be collected from citizens annually.</p> <p>A minimum of 60,000 litres of hazardous spills is prevented from entering our land and waterways annually.</p>	<p><b>A.</b> Develop a Fire Department Climate Change Action Plan in alignment with the Corporate Climate Change Action Plan.</p> <p><b>B.</b> Develop operational strategies for response to weather-related risks in support of Calgary Emergency Management Agency planning and direction.</p> <p><b>C.</b> Devise strategies to identify the inherent and social vulnerability of communities to climate hazards.</p> <p><b>D.</b> Research and develop fire-safe land and building strategies that support a reduction in fires and impact on the environment (i.e. sprinkler systems, wildfires).</p> <p><b>E.</b> Advance the management of household and industrial hazardous materials.</p> <p><b>F.</b> Enhance planning, preparedness and response to high fire risk occupancies.</p>



Advances in firefighting materials and equipment reduce our reliance on the city's potable water supply.



## 5. Valuing and empowering our workforce

Firefighters provide speciality rescue services, including high-angle, confined space, heavy and aquatic rescue.

## 5. Valuing and empowering our workforce

### Our vision for 2021

*In 2021, our workforce has just-in-time access to the types of training and development that support our service to citizens. Our human resources management and programs align with our organizational goals and motivate and support staff in achieving our vision. We apply technology as a strategic tool and enabler for public service innovation, productivity growth and reduction of our environmental footprint. Working in concert with our unions, we create service delivery and workforce strategies that protect the safety of our citizens and reflect consideration for all of the factors impacting our sustainability.*

We fully understand and manage our human capital risk to ensure we meet the evolving service needs of our citizens.

Our employees will have the skills and knowledge to deliver a breadth of fire and community safety service to citizens through world-class training, technology and innovation.

Our management and labour work collaboratively to create a safe, engaged and sustainable workforce.

### Our success in valuing and empowering our workforce

- Our Diversity Recruitment Strategic Action Plan outlines how the Fire Department is working to attract and recruit qualified women, Aboriginals and visible minorities.
- An online learning management system, CFDLearn, was introduced to give employees access to online training at times most convenient for them.
- The use of innovations such as heat-sensing units and a flashover simulator for training have improved the safety and effectiveness of fire response.
- The Fire Department and International Association of Fire Firefighters Local 255 established the Joint Labor Management Wellness-Fitness Initiative to provide comprehensive medical support, screening and fitness training to firefighters.
- In 2010, 97 per cent of staff participated in a wellness medical exam and 74 per cent completed fitness testing.



## 5. Valuing and empowering our workforce

### Our services today

With 90 per cent of our operating expenditures dedicated to salaries and wages, our workforce is our most important asset and an essential element of our sustainability and success.

**Optimizing our human capital.** We must continue to develop the knowledge, capabilities and motivation of our staff to align them with our organizational vision and goals. Our strategic workforce planning will support the work we are increasingly being called upon to handle, such as non-emergency and community safety services as well as weather-related and other specialized response. This planning will reduce our human capital risk by identifying gaps in our workforce and skills and mapping out the training, employee development, recruitment and succession planning necessary to mitigate these risks.



Our leadership development will also be linked to our future vision and goals, including an evolving emphasis on community safety services and managing our talent for the future.

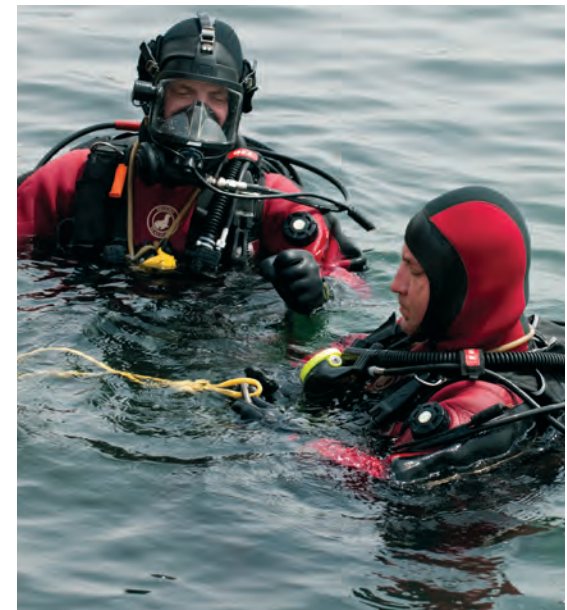
As the face of our communities continue to change, our organization must reflect the same richness and diversity. We are extending our outreach to citizens of different cultures, genders and backgrounds to build a workforce that better represents the people we serve.

As an organization steeped in tradition and a proud history, we recognize the significance of organizational change required to support the tighter integration of our stations and firefighters into our communities and advance the complete community vision for Calgary. Ours is a service driven to protect and safeguard our citizens, and it is this continuity in mandate that will unite our past with our future. Our organizational culture must evolve with our services, and we will incorporate change management principles across our operations to encourage and support this movement.

**Enhancing and expanding our training.** With a workforce distributed across locations and shifts, we are challenged to provide consistent, timely training without adversely impacting staff availability for emergency response. By leveraging new technologies, such as simulation training and applications, we can improve both the depth and frequency of training available to our staff. Our appropriate use of technology will accelerate decision making by building confidence, get information to employees quickly regardless of time or place, connect those with the right knowledge to those who need it and empower our workforce through greater engagement.

Our state-of-the-art training technology and classes will be extended to other agencies to offset our costs, contribute to regional resiliency and generate additional revenue.

We will continue to develop knowledge experts dedicated to understanding specialized areas of response, similar to units such as hazardous materials and aquatic rescue. This approach will result in faster innovation, creation and implementation of new services. Additionally, we will pursue partnerships with local, provincial and national organizations to develop and deliver specialty training. These relationships will support our more holistic approach to community safety issues, help deepen our combined level of knowledge and encourage efficiencies across all partnering agencies.



**Building relationships to support staff safety and success.** Historically, our labour-management relations have emphasized fire-based service delivery. As citizen demand for expanded community safety services grow, we will need to work closely to adapt new approaches to service delivery.

Building on our history of joint staff health and safety initiatives, we will continue to expand our occupational health and safety program to focus on injury prevention and healthy lifestyles for staff in their homes and communities. While such initiatives have direct benefit to our employees and organization, we believe their actions and behaviours can be leveraged to contribute to healthier citizens, families and communities.

Because 85 per cent of our staff provide frontline service, their input and feedback is critical to helping shape our organization, programs and services. We will increase the engagement opportunities for our employees to foster understanding, strengthen our service delivery and increase the sense of ownership our staff have regarding our future direction.



## 5. Valuing and empowering our workforce: **targets and strategies**

Visions	2021 Targets	Strategies
<p><b>13.</b> We fully understand and manage our human capital risk to ensure we meet the evolving service needs of our citizens.</p>	<p>We can quantify our human capital risk.</p> <p>There are one to two successors identified for all leadership and line management positions.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Adopt a risk management approach to human capital.</li> <li><b>B.</b> Align human resources programs and practices with organizational goals.</li> <li><b>C.</b> Support a community safety mandate through integration of change management strategies into education, training and communication initiatives.</li> <li><b>D.</b> Identify and mitigate gaps in the workforce to support future fire and community safety service delivery.</li> <li><b>E.</b> Provide recruitment and outreach to access a broad range of skilled talent that exists in the market.</li> </ul>
<p><b>14.</b> Our employees will have the skills and knowledge to deliver a breadth of fire and community safety services to citizens through world-class training, technology and innovation.</p>	<p>All firefighters have access to handheld technology.</p> <p>At least \$2 million in revenue will be generated from training and education provided to other agencies.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Evaluate and implement technologies to increase training frequency and depth of knowledge related to key learning and skills.</li> <li><b>B.</b> Expand technology and training programs, using a revenue-generating business model, to other agencies.</li> <li><b>C.</b> Establish specialty service teams to address evolving community safety service needs.</li> </ul>
<p><b>15.</b> Our management and labour work collaboratively to create a safe, engaged and sustainable workforce.</p>	<p>An occupational injury index based on severity and duration of injury is established to assess impact of different interventions on employee health.</p> <p>Employee satisfaction scores are 75 per cent.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Develop integrated occupational health and safety strategies, including considerations for healthy lifestyles and injury prevention beyond the job, and measure impact on staff health, safety and recovery.</li> <li><b>B.</b> Leverage internal health and safety expertise and knowledge to enhance community health and safety.</li> <li><b>C.</b> Increase opportunities to secure employee input and feedback on workplace and service delivery issues.</li> </ul>





The number of potential retirements is expected to increase over the next five years as almost a quarter of our employees are over the age of 50.



## 6. Building service resiliency through emergency management

Over 100 firefighters, along with equipment and emergency apparatus, were sent to help battle the wildfires in Slave Lake in 2011.

## 6. Building service resiliency through emergency management

### Our vision for 2021

*In 2021, we have established relationships, planning and protocols critical to maintaining our service to citizens throughout the course of any large-scale disaster or emergency. By leveraging our stations and firefighters located throughout Calgary, we are a key partner in helping create resilient, self-activating communities. We are closely tied to forecasting emerging disaster and emergency events, and prepare our workforce and communities to respond safely, effectively and appropriately.*

We achieve public safety resiliency through partnerships locally, regionally, provincially, nationally and internationally.

We have a comprehensive emergency management program to ensure uninterrupted critical fire and community safety services during any large-scale emergency incident.

We contribute to the preparedness and self-activation of communities in the response to, and recovery from, large-scale disasters and emergencies.

### Our success in building service resiliency through emergency management

- Calgary firefighters assisted in Slave Lake during the 2011 wildfire and recovery efforts, 2010 Airdrie train derailment and 2009 British Columbia wildfires.
- A mutual aid agreement has been established with Edmonton Fire Rescue to assist in providing continuity of fire service during a large-scale incident.
- Members of the hazardous materials team have been trained in chemical, biological, radiation, nuclear and explosives response.
- A comprehensive business impact analyses has identified the critical fire and community safety services to be provided during and following a large-scale event.
- A number of mock disaster exercises involving the Fire Department and other response agencies were completed to test response plans, including a Bow River hydrocarbon spill and sour gas release.



## 6. Building service resiliency through emergency management

### Our services today

In 2008, the Calgary Emergency Management Agency (CEMA) was established to provide business continuity and emergency planning for the Corporation and coordinate multi-agency response to large-scale natural disasters and emergencies. Emergency management within the Fire Department includes planning to ensure we can support CEMA during widespread events as well as developing our own policies, strategies and practices so we can maintain service to Calgarians throughout response to, and recovery from, any large-scale incident.

**Building resiliency at all levels.** As the scale of potential events to which we respond increases, our ability to both effectively manage the incident and provide continuation of fire service becomes essential. Formalized relationships and agreements with other agencies and municipalities will continue to be an important focus to help us bolster our resources during these events and ensure the protection of our citizens.

Our role in resiliency extends beyond our city to regional, provincial, national and international communities. Increasingly, we are a resource to other municipalities worldwide in need of fire and community safety service in the face of large-scale disasters, as witnessed during the Haiti earthquakes in 2010. As part of this global community, we will work to more clearly define our responsibilities, capabilities and capacity to assist while also maintaining our service to Calgarians.

**Ensuring our ability to respond to any event.** We are expected to be the workforce responsible for frontline response to, and recovery from, large-scale disasters and emergencies. Our specialized response capabilities of today may not be sufficient for the events expected in the next decade. In partnership with CEMA, we will monitor the types of natural disasters, terrorist events and large-scale emergencies that may impact our city and provide our staff with appropriate training and equipment.

We will continually adapt and update our planning and training in preparedness, response and recovery as well as business continuity to reflect the growing nature of events to which we will respond. Significant work has taken place around preparedness for pandemics, oil and gas development incidents, flooding and airplane- and train-related incidents. We will work to develop additional weather-adaptation strategies for response to incidents such as ice storms and tornados.

Effective response to a large-scale incident requires us to have a robust and resilient supply chain that minimizes any disruption to our service. We must identify key partnerships, agreements and redundancies within this supply system to ensure our ability to respond regardless of the type of event.



**Preparing communities for emergencies.** As a City service with ongoing presence in our communities through our stations and firefighters, we can leverage our resources to help support disaster preparedness and education for citizens. Our outreach efforts can be expanded to inform residents of what to do during natural disasters and how to support their communities in response and recovery efforts. Our intent is to help build better community resiliency and self-sufficiency, regardless of whether the event is a fire or other large-scale incident.

As part of our role in communities during a disaster, we will examine ways in which our stations may be used to provide temporary shelter, a muster point or instruction to communities.



## 6. Building service resiliency through emergency management: targets and strategies

Visions	2021 Targets	Strategies
<p><b>16.</b> We achieve public safety resiliency through partnerships locally, regionally, provincially, nationally and internationally.</p>	<p>Formal agreements will be established with at least three other fire departments to provide assistance to Calgary.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Define Fire Department leadership and participation roles in the response to large-scale incidents at local, regional, provincial, national and international levels.</li> <li><b>B.</b> Establish relationships with other fire departments to provide support and redundancy in the event of a large-scale incident.</li> <li><b>C.</b> Identify emerging issues in the area of specialized response and collaborate with appropriate agencies and levels of government to develop strategies to mitigate risk to our communities.</li> </ul>
<p><b>17.</b> The Fire Department has a comprehensive emergency management program to ensure uninterrupted critical fire and community safety services during any large-scale emergency incident.</p>	<p>100 per cent of staff receives training in roles and appropriate response to identified large-scale natural disasters and emergencies.</p> <p>A plan will be in place to mobilize the entire available Fire Department workforce during the course of a large-scale disaster or emergency.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Create a windshield survey plan to establish the initial response of the Fire Department in a large-scale event.</li> <li><b>B.</b> Conduct an internal emergency management risk assessment and develop mitigation and recovery strategies.</li> <li><b>C.</b> Establish Fire Department supply chain and infrastructure resiliency for disaster response.</li> <li><b>D.</b> Establish technology and communications plans to mitigate the risk of loss of communications.</li> <li><b>E.</b> Implement an internal emergency management training and exercise program.</li> <li><b>F.</b> Develop workforce strategies to ensure staffing and support to Fire Department staff and their families during a large-scale response.</li> </ul>
<p><b>18.</b> We contribute to the preparedness and self-activation of communities in the response to, and recovery from, large-scale disasters and emergencies.</p>	<p>Communities will have demonstrated the resiliency to self-activate to respond to natural disasters.</p>	<ul style="list-style-type: none"> <li><b>A.</b> Establish the role of disaster-resilient fire stations in the community.</li> <li><b>B.</b> Define and demonstrate the Fire Department's role in assisting communities to self-activate in response to large-scale natural disasters and emergencies.</li> <li><b>C.</b> Prepare communities for threats, shocks and surprises in line with Calgary Emergency Management Agency direction.</li> </ul>



The nature of incidents for which we must be prepared to respond to and recover from are changing due to both natural and manmade factors.



## Appendices



# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

## Introduction

A Sustainability Appraisal (SA) has been completed for the Fire Department's 10-year sustainability plan. This exercise has informed the project decision-making process by considering the question: How does the project under consideration contribute to achieving The City's 2020 Sustainability Direction (2020SD)? The Appraisal process has informed the development of the Fire Department's 10-year sustainability plan and is summarised in the Output Diagram (Figure 2).

## Sustainability

Sustainability is about making our community a better place for current and future generations. In moving towards sustainability The City of Calgary strives for community well-being, a sustainable environment, a prosperous economy and making smart growth and mobility choices. This is achieved by having the financial capacity and creating a sustainable corporation that will drive toward this vision and provide the services Calgarians need today and in the future. It is about "building a great city for everyone, forever". 'Sustainable development' has been a commonly used term since the 1990s and is now recognized as a key issue at both the global and local scale. In 2004, Calgary City Council adopted the Brundtland definition of sustainable development:

'Development that meets the needs of the present without comprising the ability of future generations to meet their own needs.' Brundtland Commission, 1987.

This was followed by the approval of the Triple Bottom Line (TBL) Policy and Framework in 2005. Calgarians

responded to the challenge of sustainability by creating the imagineCALGARY Long Range Urban Sustainability Plan. This is a 100-year vision that articulates the city in which Calgarians would like to live and identifies how to get there. All Calgarians, including individuals, organizations, institutions, businesses and The City, play a vital role in achieving the goals and targets set out in the imagineCALGARY plan. Since this time, many plans and policies have been approved and projects implemented which relate to individual parts of sustainability. The City is taking a leading role in achieving these goals and targets.

We have been acknowledging and building commitment around sustainability for a number of years but the connection between our day-to-day choices and longer term decision-making requires a new way of thinking and commitment for us to be truly sustainable in action.

## The 2020 Sustainability Direction

The 2020SD is The City of Calgary's 10-year strategic sustainability plan. It identifies what must happen at The City over the next 10 years to contribute towards the imagineCALGARY 100 year vision. The 2020SD connects the imagineCALGARY long-term vision and plan to The City's three-year business plans and budgets (BPBC3). BPBC3 is a reflection of the first three years moving toward the 10-year timeframe. Council confirmed that sustainability would be the core direction for 2012-2014 business plans and budgets. The Administrative Leadership Team directed Administration to use the 2020SD as the basis of the process to embed sustainability into the business plans and budgets. The 2020SD is also the framework for Administration to address Council's Fiscal Plan for Calgary.

The 2020SD considers our role as a municipality in delivering a "great city for everyone, forever". All municipal departments and business units play a role in building this type of city. Working cross departmentally towards specific goals increases the ability of the Corporation to respond using current resources. In building the bridge between The City's actions and imagineCALGARY, the 2020SD allows departments to take action towards imagineCALGARY over a 10-year period, while at the same time achieving the objectives of Council's Fiscal Plan for Calgary within the next three years. Figure 1 describes the path towards imagineCALGARY.

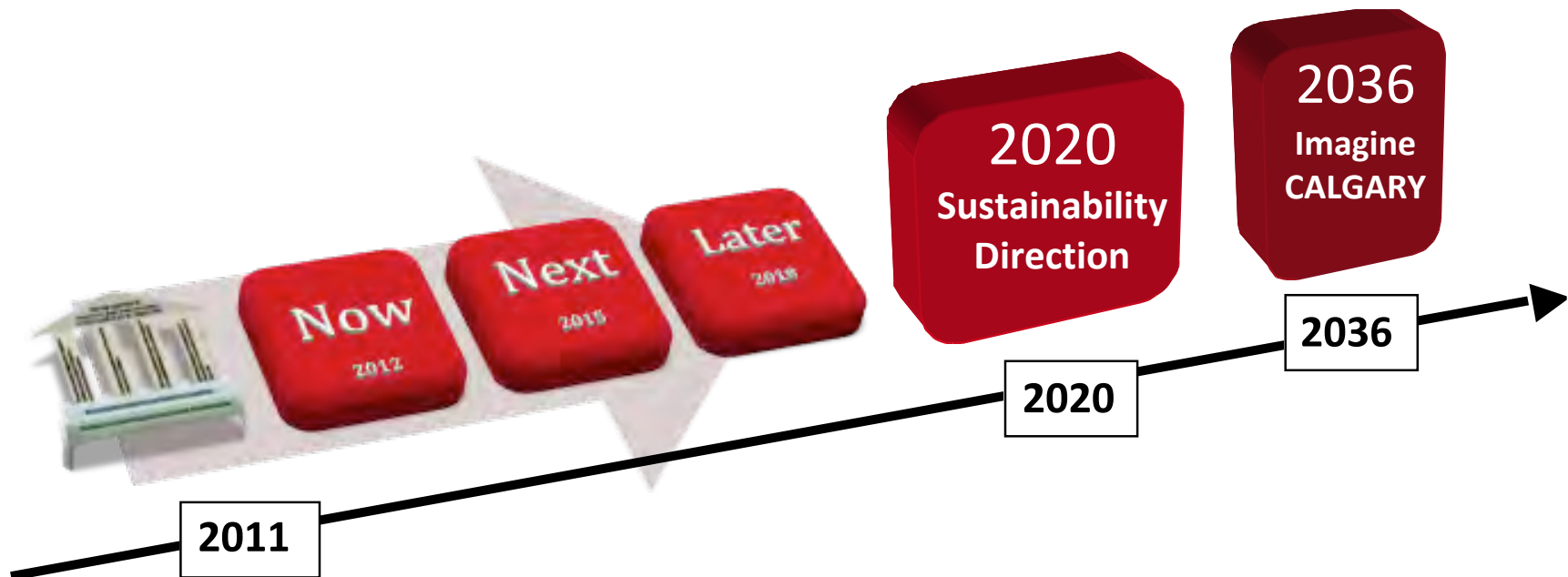
The 2020SD contains 10-year goals, objectives, targets, indicators and strategies. In addition to providing a 10-year timeframe, the 2020SD is intended to:

- facilitate cross-departmental discussion and collaboration by establishing goals, objectives and targets that are achieved by the contribution of many;
- be used as a guide for decision-makers to consider if their decisions link to the long-term and move The City toward the shared vision;
- identify the multiple outcomes of the decision and recognize efficiencies as a result;
- identify the impact, either beneficial or detrimental, on other areas of work within The City; and
- help align The City's multitude of sustainability initiatives.

# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

Figure 1: Towards imagineCALGARY



# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

## The Sustainability Appraisal

The purpose of the sustainability appraisal is to maximize the sustainability of plans, projects, etc. through meaningful integration of sustainability considerations in its development and implementation. Utilizing the 2020SD as the core of a project, plan or process enables the project team and sponsor to not only achieve the long term objectives, but clearly indicate the linkages to the shorter term, such as business planning cycles.

Founded on the principles of the TBL as approved by Council in 2004, in addition to the research conducted as part of the development of the 2020SD, including global benchmarking exercises and indicator use, this SA allows for a qualitative appraisal of City of Calgary projects, which can be illustrated graphically.

The benefits of the SA include:

- The SA process builds cross-departmental relationships and responsibilities that enhance opportunities for collaboration and close gaps.
- The use of SA can facilitate a more integrated cross-discipline project design and implementation process.
- It ensures a clear line of sight with the longer term vision.
- The SA identifies areas that can provide real benefits and improvements to the project.

- It empowers participants to lead in the decision-making process.
- It enables the introduction of emerging technologies, practices and philosophies, increasing the opportunity for innovation.
- The SA helps evaluate our decisions, draw evidence-based conclusions and reflect on the results.

## Methodology

The Sustainability Process is an iterative process that identifies and reports on the likely significant effects of an action at key junctures of its development. In relation to the Fire Department sustainability plan, Figure 2 outlines the process for the SA.

### Stage A: Vision and Principles

- In 2008, Council approved six sustainability priorities for the Fire Department.
- The Sustainability Assessment Framework is reviewed with project team as based upon the 2020SD.
- Relevant policies, plans and programmes reviewed.
- Relevant social, environmental and economic baseline collected.
- Plan vision and objectives tested against the 2020SD.

### Stage B: Consultation and Accountability Framework

Chief Burrell and the Fire Department Leadership Team acted as the sponsors of the project. The project was managed by Fire Department Sustainability Plan Team. The Office of Sustainability provided strategic services, facilitation, corporate overview, stakeholder engagement and the development of tools for analysis.

Stakeholders play a key role in the development of the SA. For the purposes of developing a strategic plan, the concept of a Peer Review Group was established. The purpose of this group was to provide input into the development of the Fire Department sustainability plan as well as reviewing the incorporation of their input. A stakeholder analysis with criteria that includes subject matter knowledge, accountability, thought leadership, etc. were conducted. The 2020SD Objective areas were used as a guide to identify stakeholders. An additional stakeholder group was established within the Fire Department to support the process. This group was made up of Deputy Chiefs and other specialists within the Fire Department. This group provided insight into the current reality, benchmarks and targets as well as opportunities and challenges for moving the Fire Department toward sustainability.

Figure 2: Sustainability/TBL Appraisal Process



# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

The Fire Department presented their six priorities and the Fire Department's 2021 goals to the Peer Review Group. A key set of questions were formulated by the Peer Review Group and Project Team in relation to each 2020SD Objective. This was an iterative process facilitated by the Office of Sustainability. These questions were then answered by the Fire Department stakeholder group. The answers were used to inform the formulation of strategies. In addition, benchmarks and best practices were gathered to further inform the plan and formulate targets.

## Stage C: Appraisal #1

The draft plan was appraised by the project team using the SA Framework. This involved taking account of base-line information, key Issues and consultation responses collected in Stage A and B and then:

- predicting and assessing the effects of the preferred option;
- proposing measures for maximizing beneficial effects and mitigating adverse effects; and
- developing proposals for monitoring.

A draft plan was created and then rated. The rating system identifies opportunities for improvement and gaps within the plan. It also provides a visual of change over time.

## Stage D: Consultation & Final Appraisal

A final draft was prepared and presented to all stakeholders. Required changes were made to the draft plan based upon consultation responses and recommendations from the stakeholder groups as well as the appraisal. A final rating review was done to ensure all considerations were taken into account. The final proposed Fire Department sustainability plan was then developed in preparation for submission to Committee and Council.

## Stage E: Monitoring Implementation

This involves monitoring the implementation of the sustainability plan and achievement of the targets, objectives and ultimately the vision, including appropriate remedial action taken when necessary. This stage will be done as a collective between the Office of Sustainability, the Fire Department and stakeholders that collaborate as part of the proposed strategies and actions.

## Results: Output Models

The Fire Department 10-year sustainability plan was built and appraised using the 2020SD. The assessment is based on 32 objectives covering the six goal areas of sustainability at The City Of Calgary as portrayed in the 2020SD:

- Community well-being
- Economy
- Environment
- Smart growth & mobility
- Financial capacity
- Sustainable corporation

The output diagram provides a visual representation of how The City's sustainability objectives are supported by the Fire Department's sustainability plan. Points that are closer to the outer circle indicate that the parameter has the potential for an increasingly positive impact on the objective. Points closest to the inner circle indicate a potentially negative impact. The rating system was used by the project team and Peer Review Group to rate the current reality and the proposed plan. This enabled the teams to understand the volume and rate of change that will be assumed over the 10-year lifespan of the proposed plan.

Figure 3: SA Rating System



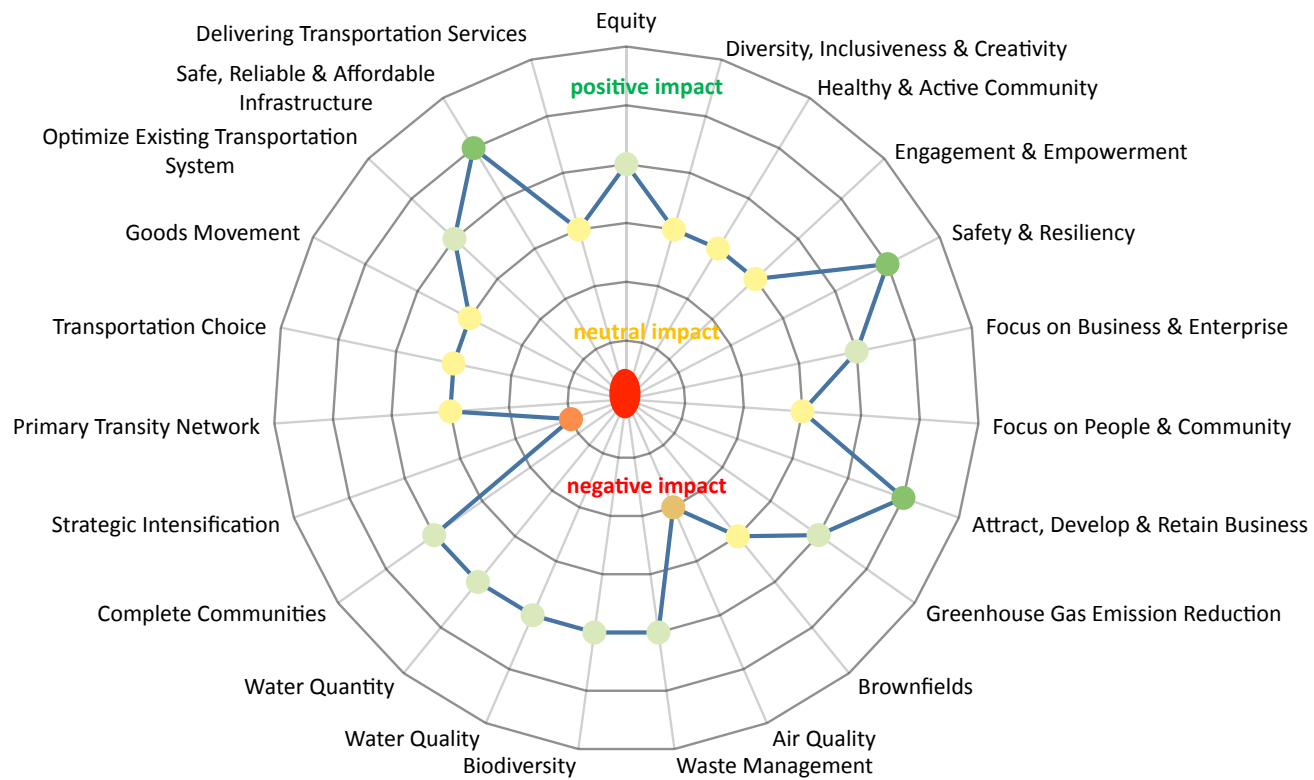
*\*Leading Global Best Practice will continuously change. The Office of Sustainability will support business units in the identification of Global Best Practices for each objective and information regularly in line with this Sustainability/TBL Appraisal tool.*

# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

Figure 4: Sustainability/TBL Appraisal Output for the Fire Department 10-year Sustainability Plan – A Great City for Everyone, Forever

## Our Services Today in 2011

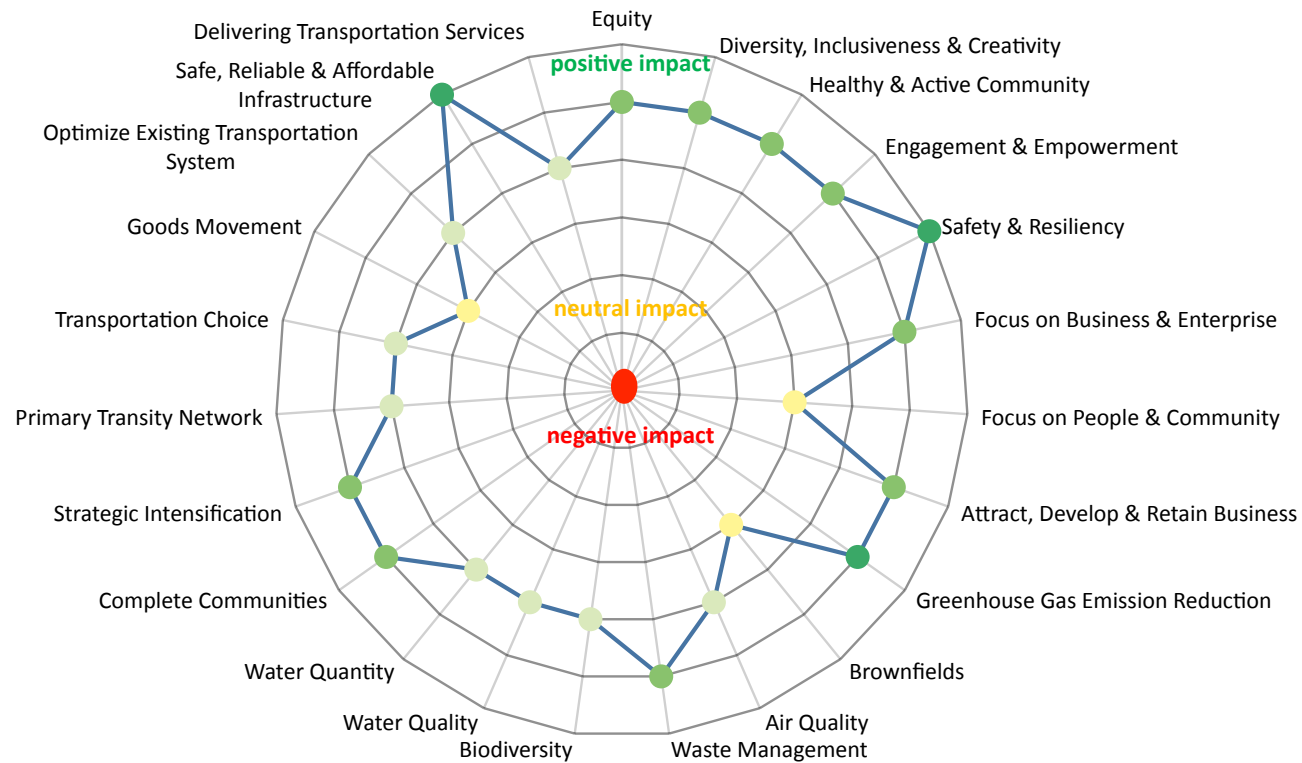


# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

Figure 4: Sustainability/TBL Appraisal Output for the Fire Department 10-year Sustainability Plan – A Great City for Everyone, Forever

## Our Vision for 2021

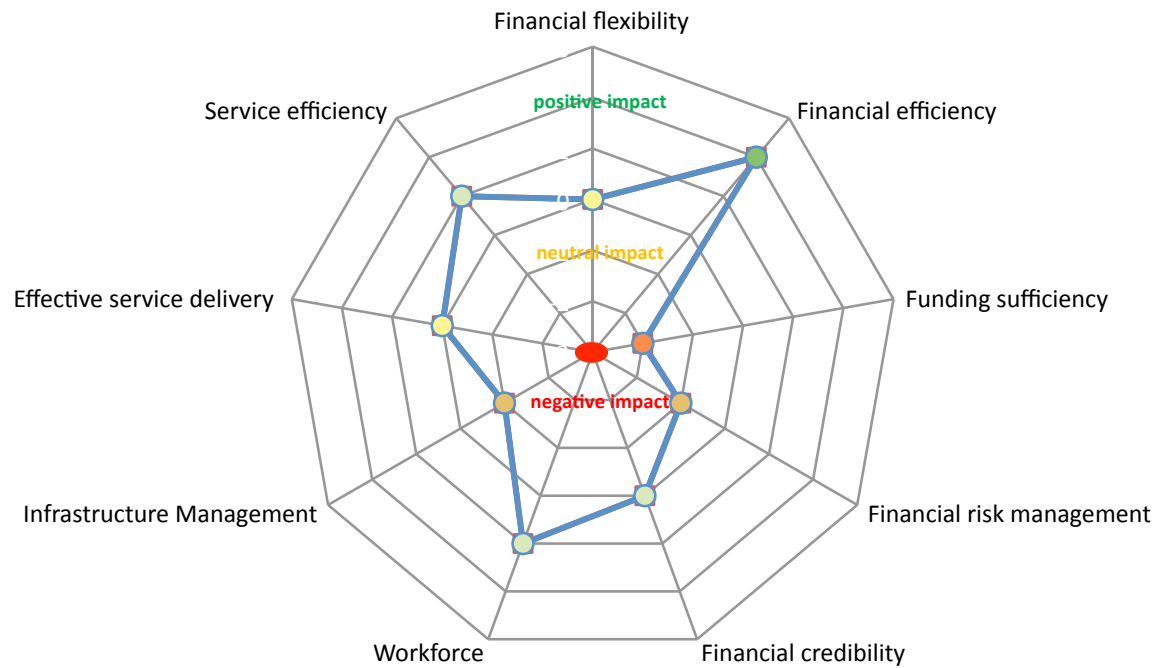


# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

Figure 5: Sustainability/TBL Appraisal Output for the Fire Department 10-year Sustainability Plan – Financial Capacity and a Sustainable Corporation

Our Services Today in 2011

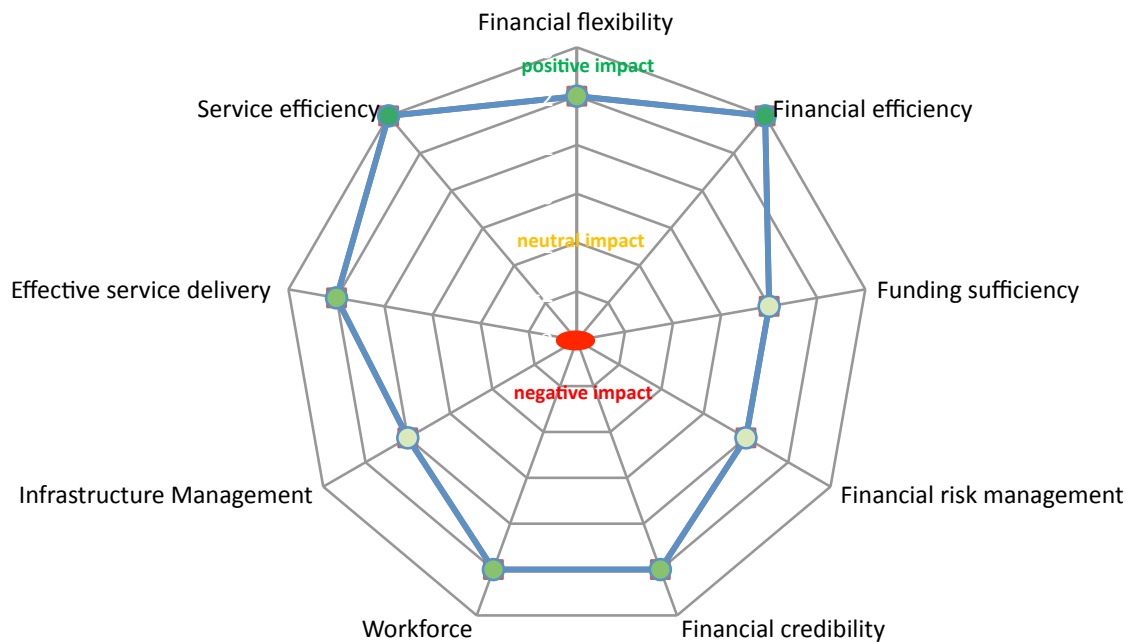


# Appendix A: 2020 Sustainability Direction Appraisal

Prepared by the Office of Sustainability, The City of Calgary

**Figure 5: Sustainability/TBL Appraisal Output for the Fire Department 10-year Sustainability Plan – Financial Capacity and a Sustainable Corporation**

**Our Vision for 2021**



## Results

The Fire Department opted for a strategy of evaluating their currently reality in order to understand how far they have to go to reach their goals and objectives set for the year 2021. These goals and objectives assessed with the rating system and illustrated through the output models, identify the Fire Department’s contribution toward the achievement of each of the 2020SD Objectives. For example, the Fire Department rated their objective in waste management as a +2. This means that the Fire Department efforts to divert waste from landfill will meet the target set in the 2020SD. However in 2011 (today), waste management is assessed at a +1. This clearly indicates a larger scale impact and contribution toward changing practices and increased effort to achieve the 80/20 by 2020 waste target. The Fire Department has articulated the results of the appraisal for 2011 and 2021 in their sustainability plan as Our Services Today and Our Vision for 2021.

The Fire Department is also excelling in number of areas to the degree of becoming a global best practice in that area. Although the vision is ambitious, the Fire Department has put targets and strategies in place to move the organization toward achieving this outcome. These targets and strategies are portrayed within the 10-year Fire Department sustainability plan or through the BPBC3 process focusing on meeting the objectives set by Council over the next three years.



## Appendix B: Emergency Response Infrastructure Investment Plan

<b>CALGARY FIRE DEPARTMENT FUNDED 2011-2016 CAPITAL BUDGET BREAKDOWN FORECAST (As of July 31, 2011)</b>									
<b>CBS Project</b>	<b>Activity</b>	<b>Description</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2009-2016 Budget</b>
			<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>	<b>Total</b>
<b>041 - Additional Stations/Equipment</b>									
041-142	412100	FI-Training Environmental	100,000	0	0	0	0	0	100,000
041-A01	411540	FI-Rocky Ridge Land (Royal Oak)	0	1,248,281	0	0	0	0	1,248,281
041-143	412101	FI-Emergency Ops Centre	10,015,647	11,662,944	0	0	0	0	21,678,591
041-167	411581	FI-Symons Valley Fire/EMS	1,000,000	11,296,709	1,000,000	0	0	0	13,296,709
041-168	411430	FI-Douglas Glen Fire/EMS Station	2,070,970	13,346,499	0	0	0	0	15,417,469
041-169	411583	FI-Seton Multi-Services Station	3,088,517	12,725,000	3,325,000	0	0	0	19,138,517
041-165	411415	FI-Bridlewood Permanent Station	100,000	10,900,000	4,800,000	0	0	0	15,800,000
041-121	411501	FI-Royal Vista Permanent	0	2,411,543	9,888,751	4,959,000	0	0	17,259,294
041-164	411582	FI-Tuscany Temporary Fire House	0	1,500,000	3,320,000	0	0	0	4,820,000
041-170	411584	FI-Emerg Resp. Houses and Land	0	4,332,206	1,500,000	0	0	0	5,832,206
041-171	411431	FI-NE Airport Station	0	0	500,000	5,500,000	8,500,000	0	14,500,000
041-172	411561	FI-Station #5 Replacement/Rebuild	2,069,171	11,851,043	1,000,000	0	0	0	14,920,214
041-173	411562	FI-Station #11 Replacement/Rebuild	700,000	10,600,000	5,950,000	0	0	0	17,250,000
		<b>Total Program 41</b>	<b>19,144,305</b>	<b>91,874,225</b>	<b>31,283,751</b>	<b>10,459,000</b>	<b>8,500,000</b>	<b>0</b>	<b>161,261,281</b>
<b>042 - Replacement Stations/Facilities</b>									
042-B01	411600	FI-Lcf Electrical	335,762	600,000	0	0	0	0	935,762
042-B01	411650	FI-Lcf Mechanical	668,844	800,000	0	0	0	0	1,468,844
042-B01	411660	FI-Lcf Structural	220,428	400,000	0	0	0	0	620,428
042-B01	411750	FI-Lcf Architectural	782,105	700,000	0	0	0	0	1,482,105
042-B01	411950	FI-General Lifecycle	719,490	500,000	0	0	0	0	1,219,490
042-B01	412050	FI-Lcf Roof Replacement	2,166,348	4,000,000	0	0	0	0	6,166,348
042-001	411720	FI-Emergency Generator	988,860	1,650,000	1,000,000	1,000,000	1,100,000	0	5,738,860
042-175	411432	FI-Facility Rehabilitation	1,800,000	2,700,000	2,000,000	2,000,000	2,000,000	2,714,000	13,214,000
		<b>Total Program 42</b>	<b>7,681,837</b>	<b>11,350,000</b>	<b>3,000,000</b>	<b>3,000,000</b>	<b>3,100,000</b>	<b>2,714,000</b>	<b>30,845,837</b>
<b>043 - Additional Equipment (Technology/Communications)</b>									
043-013	412520	FI-Communication Lifecycle	451,287	2,300,000	600,000	550,000	0	0	3,901,287
043-C08	412420	FI-Portable Radio Replacement	34,321	0	0	0	0	0	34,321
043-C08	412310	FI-Fire Hall Alerting System	959,179	0	0	0	0	0	959,179
043-C10	412701	FI-Audible Signals	9,629	0	0	0	0	0	9,629
043-014	412790	FI-Fire Traffic Control	411,257	700,000	0	0	0	0	1,111,257
043-015	412510	FI-Smart Zone Radio System	3,254,821	1,800,000	0	0	0	0	5,054,821
	NEW	Central Records Mgmt System	0	950,000	0	0	0	0	950,000
043-016	413060	FI-Urban Search/Rescue Equip	1,047,245	600,000	600,000	600,000	0	0	2,847,245
		<b>Total Program 43</b>	<b>6,167,739</b>	<b>6,350,000</b>	<b>1,200,000</b>	<b>1,150,000</b>	<b>0</b>	<b>0</b>	<b>14,867,739</b>
<b>044 - Replacement Apparatus/ Equipment</b>									
044-009	413080	FI-Personal Protective Equipment	1,802,517	2,580,000	5,875,000	3,069,000	0	0	13,326,517
044-D07	413040	FI-Replace Firefighting Equip	1,201,634	100,000	375,000	460,000	0	0	2,136,634
044-010	413090	FI-CBRNE Equipment	1,496,789	0	0	0	0	0	1,496,789
	NEW	FI-Fire Training Academy Lifecycle	0	200,000	200,000	1,100,000	0	0	1,500,000
044-D01	413000	FI-Support Vehicle Lifecycle	880,382	900,000	0	1,178,000	0	0	2,958,382
044-D02	413020	FI-Emergency Units	13,097,904	1,000,000	1,900,000	8,687,000	8,837,000	0	33,521,904
		<b>Total Program 44</b>	<b>18,479,226</b>	<b>4,780,000</b>	<b>8,350,000</b>	<b>14,494,000</b>	<b>8,837,000</b>	<b>0</b>	<b>54,940,226</b>
		<b>TOTAL BUDGET</b>	<b>51,473,107</b>	<b>114,354,225</b>	<b>43,833,751</b>	<b>29,103,000</b>	<b>20,437,000</b>	<b>2,714,000</b>	<b>261,915,083</b>

# Appendix B: Emergency Response Infrastructure Investment Plan

CALGARY FIRE DEPARTMENT UNFUNDED CAPITAL PROJECTS: 2011 ERIIP LIST													As of July 31, 2011				
Project Identifier	Project Name	Quad (Ward)	MUGS	Project Description	Cash Flow 2012-2021 (in millions)										Total Project	Operating Exp	
					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021	FTE	Amt
					Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital			
FI-11-041-01	East Core Emergency Response Station	8	G	Support Downtown Response. Standard 3 Bay facility. Includes 1 Vehicle. Land already purchased.								16,592			16,592	30	4,480
FI-11-041-03	East Macleod Emergency Response Station	14	G	Provides coverage from south of 22X to City limits and east of Macleod trail, including coverage to the communities of Chaparrel, Walden, & Legacy. Standard 3 Bay facility. Includes 1 Vehicle.				16,524							16,524	30	4,059
FI-11-041-04	Providence Emergency Response Station	13	G	Provides coverage north of 22X from 37th Street west to City limits. Standard 3 Bay facility. Includes 1 Vehicle.									19,626		19,626	30	4,592
FI-11-041-05	South East Emergency Response Station	12	G	Provides coverage to south east region from 22X south and 88th Street SE. Standard 3 Bay facility. Includes 1 Vehicle.									19,626		19,626	30	4,592
FI-11-041-06	Shepard Industrial Emergency Response Station	12	G	Provides coverage to the area bordered by Glenmore Trail to the north, Stoney Trail to the east, and 114th Ave to the South. Standard 3 Bay facility. Includes 1 Vehicle.				16,524							16,524	30	4,059
FI-11-041-07	Shepard Residential Emergency Response Station	12	G	Provides coverage to the area bordered by 22X to the south, Stoney Trail to the west, and 114th Ave to the north. Standard 3 Bay facility. Includes 1 Vehicle.							18,321				18,321	30	4,371
FI-11-041-08	Belvedere Emergency Response Station	9 & 10	G	Provides coverage to the 2007 annexed area next to 17th Ave NE & Stoney Trail W. Standard 3 Bay facility. Includes 1 Vehicle.				16,524							16,524	30	4,059
FI-11-041-09	Far North West Industrial Emergency Response Station	2	G	Provides coverage to the industrial area bordered by Stoney Trail to the south, Sarcee trail to the east, and 144th Ave to the north. Standard 3 Bay facility. Includes 1 Vehicle.								18,962			18,962	30	4,480
FI-11-041-10	Keystone Hills Emergency Response Station	3	G	Provides coverage to the area bordered by Stoney Trail to the south, 10th Street NE to the east, 14th Street NW to the west, Deerfoot Trail to the east, and City Limits to the north. Standard 3 Bay facility. Includes 1 Vehicle.						17,701					17,701	30	4,265
FI-11-041-11	North Annex Industrial Area Emergency Response Station	3	G	Provides coverage to the area bordered by Stoney Trail to the south, 10th Street NE to the west, Deerfoot Trail to the east, and City Limits to the north. Standard 3 Bay facility. Includes 1 Vehicle.							18,321				18,321	30	4,371
FI-11-041-12	Northwest Residential Emergency Response Station	2	G	Provides coverage to the industrial area bordered by 144th Ave NW to the south, Sarcee trail to the east, and city limits to the north. Standard 3 Bay facility. Includes 1 Vehicle.										20,313	20,313	30	4,707
FI-11-041-13	West Macleod Emergency Response Station	14	G	Provides coverage to the area south of 22X to the City limits and West of Macleod to the City limits. Including coverage to the existing communities of Silverado and Sirocco. Standard 3 Bay facility. Includes 1 Vehicle.						17,701					17,701	30	4,265
FI-11-041-14	Far South East Emergency Response Station	12	G	Provides coverage to the South East region from 22X south and 88th Street SE. Standard 3 bay facility. Includes 1 vehicle.										20,313	20,313	30	4,707

# Appendix B: Emergency Response Infrastructure Investment Plan

CALGARY FIRE DEPARTMENT UNFUNDED CAPITAL PROJECTS: 2011 ERIIP LIST														As of July 31, 2011			
Project Identifier	Project Name	Quad (Ward)	MUGS	Project Description	Cash Flow 2012-2021 (in millions)										Total Project	Operating Exp	
					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021	FTE	Amt
					Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital			
FI-11-041-15	Fire Training Academy-Storage Facility	12	U	14 Bay apparatus storage facility for training and USAR vehicles. Currently using training or outdoor space which reduces usefulness of existing assets.		2,200									2,200		
FI-11-041-16	Fire Training Academy-Decontamination/Fitness Facility Upgrade.	12	U	Addition to existing Training facility where duty gear, lockers, showers, and fitness facilities can be co-located in an appropriately sized and ventilated area with enough capacity to meet future needs.						15,000					15,000		
FI-11-041-17	Fire Training Academy - Burn Tower	12	U	Improves functionality by supporting various firefighting and rescue scenarios and addresses structural lifecycle of existing tower.						8,900					8,900		
FI-11-041-18	Fire Headquarters	10	U	Consolidation of dispersed facilities and upgrade of existing facilities to meet 40 year forecasted requirements. Land already purchased at 1755 18th Ave NE.		81,000									81,000		
FI-11-041-19	Fire Station #16 Replacement	9	U	Replacement for 36 year old facility. Contingent on HQ upgrade. Can be relocated to a smaller portion of the existing site.		12,500									12,500		
FI-11-041-20	Station #7 Replacement	7	M	Replacement for 45 year old facility. Building technically sound but functionality obsolete. Consider relocation to existing unused parcel of land at 3705 Edmonton Trail.				13,400							13,400		
FI-11-041-21	Station #17 Renovation	1	M	Renovations to 39 year old facility. Bay capacity ok but needs a rebuild of office and administrative space. May be able to be used for FPB Zone Office and Distributed training.							8,900				8,900		
FI-11-042-02	Facility Lifecycle	n/a	M	Ongoing capital repairs to various CFD facilities. Final cost evaluations underway.						2,000	2,000	2,000	2,000	2,000	10,000		
FI-11-043-01	Communication Lifecycle	n/a	M	Replacement of obsolete radios, data terminals, modems, etc in order to support fire fighter safety and provision of service.			535	169	2,801	240	140	1,610	199	2,189	7,883		
FI-11-043-03	Traffic Signal Priority	n/a	U	Upgrade existing per-empt system to GPS technology	4,825	200				825	200				6,050		
FI-11-043-04	Radio Infrastructure	n/a	U	Lifecycle replacement for existing system. Emerging issue to delays in implementation of a Provincial standardized system.	14,945	400	400	4,000						4,000	23,745		
FI-11-043-05	Misc. Hardware/Software Enhancements	n/a	U	Funds for purchase and installation of smaller dollar software programs and hardware upgrades. Example Dashboarding Software	150	450		250	250	100	150	350		150	1,850		
	Telestaff Upgrades	n/a	U	Ongoing lifecycle upgrades to scheduling and rostering software	150		150		150		150		150		750		
FI-11-043-06	Fire Hall Alerting Upgrades	n/a	U	Ongoing lifecycle upgrades to alerting system		420	150	30	1,020	150		450	600		2,820		
	USAR Equipment	n/a	G	Matching funding for JEPP grant for acquisition of emergency search and rescue operations				150	150	150	150	150	150	150	1,050		
FI-11-044-01	Heavy Fleet Lifecycle	n/a	M	To replace, rehabilitate, and develop Heavy Fleet inventories to support optimized front line service delivery and fire fighter and citizen safety					4,787	5,463	829	8,665	0	4,059	23,803		

## Appendix B: Emergency Response Infrastructure Investment Plan

CALGARY FIRE DEPARTMENT UNFUNDED CAPITAL PROJECTS: 2011 ERIIP LIST														As of July 31, 2011			
Project Identifier	Project Name	Quad (Ward)	MUGS	Project Description	Cash Flow 2012-2021 (in millions)										Total Project	Operating Exp	
					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2012-2021	FTE	Amt
					Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital	Capital			
FI-11-044-02	Light Fleet Lifecycle	n/a	M	To replace, rehabilitate, and develop Light Fleet inventories to support optimized front line service delivery and fire fighter and citizen safety				650	650	650	650	650	650	650	4,550		
FI-11-044-03	Fire Equipment Lifecycle	n/a	M	Capital lifecycle funding for medical, extrication, and other specialized equipment upgrades and replacements.		0	0	186	229	217	1,499	450	361	186	3,128		
FI-11-044-04	Personal Protective Equipment Lifecycle	n/a	M	Capital lifecycle funding for protective equipment and breathing apparatus upgrades and replacements.	0	0	440	871	593	1,473	1,304	1,165	2,071	4,638	12,555		
FI-11-044-05	Fire Training Academy - Equipment Lifecycle	n/a	M	Replace burning props that have worn down over time to ensure fire situations are appropriately controlled and safe for personnel				100	200	100	200	100	200	100	1,000		
<b>SUB-TOTAL UNFUNDED PROJECTS</b>					<b>20,070</b>	<b>97,170</b>	<b>1,675</b>	<b>69,378</b>	<b>10,830</b>	<b>70,670</b>	<b>52,814</b>	<b>51,144</b>	<b>45,633</b>	<b>58,748</b>	<b>478,132</b>	<b>390</b>	<b>57,007</b>

# Appendix C: Calgary Fire Department performance benchmarks

## Response Preparedness

1. Number of stations per capita at or near comparable Canadian cities
2. Number of fire suppression personnel per capita at or near comparable Canadian cities
3. Average service area covered per station at or near comparable Canadian cities
4. Fire suppression cost per capita at or near comparable Canadian cities
5. Fire apparatus preventative maintenance program, including lifecycle program that includes annual testing and a program specific to each type of vehicle with a maintenance schedule based on kilometres traveled and hours of operation for each vehicle
6. Lifecycle apparatus replacement guidelines:
  - Engines: 15 years
  - Tankers: 18 years
  - Aerial and ladder trucks: 18 years
  - Specialized vehicles: 15 years
  - Rescue trucks: 11 years
  - Boats: 9 years
  - Light vehicles: 5 to 10 years, depending on vehicle type

## Response Performance

7. A. First-in engine emergency response within seven minutes at fire rescue incidents, 90 per cent of the time  
B. First-in engine emergency responses within six minutes and thirty seconds at life-threatening emergency medical incidents, 90 per cent of the time
8. Full first alarm assignment at a fire suppression incident within eleven minutes, 90 per cent of the time
9. 90 second or less turnout for the preparation of the first engine company at fire rescue incidents, 90 per cent of the time
10. 60 second or less turnout time for the preparation of the first engine company at life-threatening emergency medical incidents, 90 per cent of the time
11. Four minute and thirty second (270 seconds) or less travel time for the arrival of the first engine company at fire rescue incidents or life-threatening emergency medical incidents, 90 per cent of the time
12. Eight minute and 30 second (510 seconds) or less travel response time for the deployment of a full first alarm assignment at a fire suppression incident, 90 per cent of the time
13. Flame spread limited to within the room or object of origin in 65 per cent of building and structure fire suppressions
14. Engine companies staffed with four firefighters
15. Rescue companies staffed with two firefighters
16. Aerial companies staffed with two firefighters
17. Tanker companies staffed with two firefighters
18. Hazmat companies staffed with two firefighters