

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-1		Community Services & Protective Services	CEMA	EOC Improvements (\$1,900 over 2 years)	Building components are life-cycled and meet current compliancy requirements. Needed renovations are completed to support efficient deployment of resources. Reduction in maintenance and repair costs. Lower the risk of failure of equipment.	935	1,900			Over 2 years	2014
P-2		Community Services & Protective Services	CEMA	Incident Management Software	Improve emergency management communications, resource tracking and situational awareness	935	500			6 - 12 months	2014
P-3	C2	Community Services & Protective Services	CFD	Community Support Centres	Community Resiliency	935	1,250			1 - 2 years	2015
P-4		Community Services & Protective Services	CFD	Flood Mitigation for Fire Stations - 1, 2, 6, 15	Service Delivery Business Continuity and Resiliency	935	1,400			1 - 2 years	2015
P-5	C3	Community Services & Protective Services	CFD	Large Scale Evacuation / Hazardous Condition Notification	Method of Local Community Notification	935	4,000	001	100	1 - 2 years	2015

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-6		Community Services & Protective Services	Community & Neighbourhood Services	Calgary Zoo - Berm Construction	Flood protection higher than the 1:100 year flood elevation and pumping capacity to manage overland and groundwater penetration. <i>Estimated operating cost \$125-224 per year for two years</i>	956	25,000	449	225	Over 2 years	TBD
P-7		Community Services & Protective Services	Community & Neighbourhood Services	Calgary TELUS Convention Centre	Mitigation & Resiliency	956	350	449	18	6 - 12 months	2014
P-8		Community Services & Protective Services	Community & Neighbourhood Services	Talisman Sport Centre - 31K for administrative support (5% cost)	Flood Protection	956	1,000	449	31	6 - 12 months	TBD
P-9	18	Community Services & Protective Services	Parks	Bowness Park Lagoon Inlet Structure Protection - The 2013 flood caused significant damage to the lagoon inlet structure. During the course of completing the repairs to the structure gabion mattresses were installed to provide additional protection to the inlet.	The gabion mattresses should protect the inlet structure from future damage due to flood or high water, reducing or eliminating future costs related to flood repairs.	932	90			Under 6 months	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-10	I9	Community Services & Protective Services	Parks	Bowness Park - Washrooms and Facilities • 2 Seasonal and 1 Year-round washrooms – mechanical put on roof of all washrooms, originally on ground level. Went from tile to acrylic flooring on all washrooms	Relocation of electrical or mechanical components above or out of areas susceptible to flood damage will protect them from damage due to future flood events. Resilient flooring will be resistant to future flood damage.	932	500			Under 6 months	2014
P-11	I10	Community Services & Protective Services	Parks	Prince's Island - During the 2013 flood the causeway was completely destroyed. The causeway was also completely destroyed after the 2005 event. In order to increase the resilience of the causeway additional concrete and rip rap was incorporated into the structure. Final landscaping will be completed in the spring of	After the 2005 event the shallow and deep utilities that run through the causeway were relocated below the anticipated depth of future erosion due to flooding. This resilience measure proved to be successful. The current resilience measures are designed to provide protection from further flood damage and will reduce The City's exposure to future flood related repair costs and if faced with a similar event, will maintain a critical connection to the island for emergency responders.	932	100			Under 6 months	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				2014.							
P-12	I11	Community Services & Protective Services	Parks	Beaver Dam Flats - During the June 2013 flood event, high water levels within Beaverdam Flats eroded and washed out a significant portion of the regional pathway and causeway.	The intent of the restoration work is to not only re-establish the functionality of the pathway and causeway, but to add resiliency to the structures for future high water events. If effective future flood related will be reduced or eliminated.	932	70			Under 6 months	2014
P-13	C4	Community Services & Protective Services	Parks	Bowmont Park - High water from the 2013 flood caused significant damage to gravel trails and to pedestrian boardwalk transitions. Further the flood eroded approximately 100 linear meters of riverbank, leaving an unsafe condition for park users.	The intent of the restoration work is to not only re-establish the functionality of the site, but to add resiliency for any potential future high water events. If the resiliency measures are effective, costs related to similar events in the future can be minimized and public safety will be maintained.	932	125			1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-14	C9	Community Services & Protective Services	Parks	Elbow River Stampede Pathway - The pathway along the Elbow River from the MacDonald Bridge to 25th Ave. was severely damaged during the 2013 flood. While currently in the planning and design phase consideration is being given to constructing a more robust structure capable of withstanding a similar event.	Given the severity of the damage to this segment of pathway and the critical connection to the transportation network it represents, building resilience into the repaired product will result in reduced future flood related costs and provide infrastructure that can be returned to public use faster, in the face of a similar event.	932	250			Under 6 months	2014
P-15	I12	Community Services & Protective Services	Parks	Griffith Woods Park Washrooms - Raised mechanical above flood line and flooring upgraded from tile to acrylic. Mechanical upgrades \$15,000.00 Flooring upgrades \$7,000.00	Relocation of electrical or mechanical components above or out of areas susceptible to flood damage will protect them from damage due to future flood events. Further flooring resilient to flood waters was installed.	932	20			Under 6 months	2014
P-16	I13	Community Services & Protective Services	Parks	Carburn Park - Depot - Mechanical raised above flood line and eliminated	Relocation of electrical or mechanical components above or out of areas susceptible to flood damage will protect them	932	135			Under 6 months	2013

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				downdraft furnaces. All moved above ground with ducting through roof. Further resilient flooring was installed. Mechanical costs \$125,000.00 Upgraded flooring \$9,000.00	from damage due to future flood events. Resilient flooring will be resistant to future flood damage.						
P-17	C6	Community Services & Protective Services	Parks	Inglewood Bird Sanctuary Outlooks - The outlooks are viewing platforms and seating areas that overlook backchannels and oxbows of the Bow River. During the 2013 flood the outlooks suffered varying degrees of damage from complete destruction to the structures being lifted from their foundations. The riverbanks adjacent to the structures were severely eroded. While restoration of the individual	Incorporation of the resiliency measures described should protect the structure and minimize damage caused by future flood events, resulting in reduced repair costs and improved safety for the park users.	932	400			1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				outlooks may be unique to that structure the intent of the proposed work is to not only restore the amenities' function but to also provide resilience to future flood events. Resiliency measures may include the use of resilient materials, increased riverbank protection or providing a more robust foundation to support the structure.							
P-18	C5	Community Services & Protective Services	Parks	Inglewood Bird Sanctuary Riparian Uplift - The riverbanks adjacent to the outlooks and viewing platforms were severely eroded. Enhancement of the riverbanks will be achieved through the application of bioengineering techniques.	Incorporating resiliency measures through the installation of a riparian uplift will provide added protection to the riverbanks and the infrastructure.	932	150			1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-19	C7	Community Services & Protective Services	Parks	Inglewood Bird Sanctuary Island Bridge - The island bridge suffered significant damage during the 2013 flood. The bridge was dislodged from the foundation, the adjacent riverbank was eroded and the structural integrity of the bridge may have been negatively impacted. While the planning and design for repairing the damage is in the preliminary stages, the restoration plan will include fortification of the bridge foundations and superstructure and additional protection to the riverbank.	Incorporation of resilient measures in the repair to the bridge and restoration of the riverbank should protect the structure and minimize damage caused by future flood events, resulting in reduced repairs costs and improved public safety.	932	350			1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-20		Community Services & Protective Services	Parks	Sandy Beach - Relocated Pathway & Riverbank Stabilization - High water and increased velocities caused significant erosion of the riverbank and washed out a short segment of the regional pathway. The pathway has been relocated further back from the crest of the riverbank. The length of the compromised riverbank is approximately 100 metres in length and in some areas roughly 2.5 vertical metres of land was lost. The intent of the restoration work is to not only re-establish the functionality of the site, but to add resiliency for potential future high water events. Further to the	Incorporating resilience into the proposed repairs will serve to protect the pathway and valuable land, and ensure the safety of park users.	932	900	445		1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				pathway relocation, it is proposed the bank be armoured to protect against future erosion. The potential restoration options may include resiliency measures such as toe of slope protection reinforced with a concrete product revetment and grading to a stable slope above the toe protection. Bioengineering will be incorporated in the stabilized slope. This project has been submitted to FREC.							

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-21	I15	Community Services & Protective Services	Parks	Sue Higgins Bridge Transitions - High water during the 2013 flood scoured out the pathway to bridge transitions from the Sue Higgins Pedestrian Overpass to the community of Douglasdale on one side and Fish Creek Park on the other. The current design for the project includes a steel I-beam structure attached to the bridge abutment and anchored by concrete footings installed in the respective parks on both sides of the bridge. Further fortified riverbank armouring and erosion protection will be provided.	Given this pedestrian overpass is an important link in the transportation network and heavily used for recreational purposes, resilient measures incorporated in the current design will minimize negative impacts by future flood events and allow for uninterrupted use during a similar event.	932	300			6 - 12 months	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-22	C10	Community Services & Protective Services	Parks	Sue Higgins to Anderson Road (Lafarge) - This segment of pathway has a history of being susceptible to flood damage. In 2005 approximately 300 linear metres of pathway and the land it was based on was washed out. Currently two segments of the pathway totalling approximately 330 linear metres were scoured out during the 2013 flood. As The City's access to land in this area is limited the eventual repair solutions must incorporate resilient measures to ensure similar failures are not incurred in future flood events.	Given the magnitude of the damage to this pathway and factoring in the value of the transportation link, incorporating resilient measures in the eventual repair will ensure the pathway will be able to sustain a similar event.	932	750			Over 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-23	C12	Community Services & Protective Services	Parks	Riparian Resiliency - Riparian health can be correlated with a riverbank's ability to withstand flood impacts. Areas with healthy, established riparian vegetation withstood the 2013 flood better than less healthy areas, protecting infrastructure, filtering flood debris, and providing terrestrial and aquatic habitat benefits. Habitat benefits may include nutrient loading for invertebrates, maintaining stream temperatures, nesting habitat, resting areas, and cover for a variety of species. Using work that supported The City's 2013 Riparian Strategy,	Creating a healthier riparian habitat would have economic, social and environmental benefits. Establishing healthier riparian areas, planted with a mix of native trees, shrubs and grasses would improve resiliency to high water events and provide better protection of the riverbanks. In turn, it would have a positive aesthetic impact for the user of Park areas.	932	3,000				2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				this request will plant sites identified as “unhealthy” or “healthy but with problems” across approximately 20 parks, including sites identified as critical, high or moderate priority erosion sites. In total, approximately 20 hectares would be planted across the entire length of the Bow and Elbow Rivers within the limits of the city of Calgary. Funding from the resiliency fund would: 1) further refine the project list and develop designs for each site; 2) site prep and planting; and 3) maintenance over a three-year period to establish plantings.							

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-24	C11	Community Services & Protective Services	Parks	Stanley Park - Depot - Flooring upgraded from tile to acrylic, raised mechanical in garage portion of depot Pavilion offices – flooring upgraded from tile to acrylic, changed conventional furnace to rooftop units	Relocation of electrical or mechanical components above or out of areas susceptible to flood damage will protect them from damage due to future flood events.	932	200			6-12 months	2014
P-25	C13	Community Services & Protective Services	Parks	Weaselhead Park - Weaselhead Park suffered significant damage to multiple assets throughout the park, including post & rail fencing, wooden boardwalks, pedestrian gates, service gates, gravel trails, regional pathway and post and rail fencing, While it is anticipated resilient measures will be incorporated into the restoration efforts, due to the threat of un-	Incorporating resilience into the proposed repairs will serve to protect the park infrastructure and valuable land from damage due to future flood events.	932	200			1 - 2 years	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
				detonated ordinance washed into the park from the old Canadian Armed Forces base, detailed site inspections and assessments have yet to be completed. Upon receipt of the initial site assessments and preliminary engineering reports it is reasonable to anticipate typical resilient measures such as bank protection, providing more robust boardwalks and stronger foundations will be incorporated in the final design.							
P-26	I15	Community Services & Protective Services	Recreation	Shouldice Aquatic Centre	Barriers and/or berms	933	50	426	To be determined	Under 6 months	2014
P-27	I16	Community Services & Protective Services	Recreation	Inglewood Aquatic Centre	Investigation required via consultants	933	50	426	To be determined	Under 6 months	2014
P-28		Community Services &	Recreation	Glenmore Reservoir	Barriers and/or berms, further investigation	933	250	426	To be determined	6 - 12 months	2014

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
		Protective Services		Services	required						
P-29	117	Community Services & Protective Services	Recreation	Calgary Canoe and Rowing	Barriers and/or berms, further investigation required	933	250	426	To be determined	Under 6 months	2014
P-30		Transportation	Calgary Parking Authority	Install additional storm discharge line with check valve on main parkade storm discharge lines, James Short, McDougall, TCC. Move storm pump controls to upper levels, install standby submersible storm pump for redundancy	Allow removal/pumping of flood waters that have entered into building to an alternate source when city storm lines/system is full as per 2013 Civic Plaza event, also provide fail safe to ensure that pump controls are not affected by lower level flooding.	957	240			Over 2 years	2015
P-31		Transportation	Calgary Parking Authority	Relocate main electrical switch gear/transfer switch above grade to main or P1 Levels of parkade(s) TCC, McDougall	Allow operation of facility operations to resume after utility power has been restored as per 2013 Civic Plaza event	957	350			Over 2 years	2015
P-32	145	Transportation	Roads	Centre St Bridge - lower deck hanger modifications. Provide a detail that is more resistant to streamflow and debris impact	Lessen or eliminate the damage to hangers from impact	948	500			Under 6 months	2015

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-33		Transportation	Roads	Construction of enhanced erosion and scour protection (abutment and pier rip-rap)	Lessen or eliminate the amount of channel and bank degradation that could affect foundations and abutment backfills. Above and beyond current recovery work.	948	5,000			1 - 2 years	2015
P-34		Transportation	Roads	New Roads Operations Centre (Next Generation Roads Traffic Management Centre)	The establishment of a Roads Operations Centre (ROC) with essential resources is considered the most relevant opportunity to enhance managements COP and response throughout a disaster scenario. The establishment of the ROC with proper resources is considered the Division's priority. Estimated cost \$8,000-\$12,000	948	12,000			Over 2 years	
P-35		Transportation	Roads	Back Lane Paving	Gravel back lanes and roadways present an opportunity for water to scour material from the surface requiring a complete overhaul of the roadway. There is an opportunity to reduce repair costs by paving all back lanes located in a flood zone.	948	6,000	132	300	1 - 2 years	2014
P-36		Transportation	Roads	Calgary Communication Network (CCN)	Redundancy in the communications network. Ability to do diagnostics. Keeps system in sync through GPS. Combine	948	5,000			Over 2 years	TBD

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
					into one category.						
P-37		Transportation	Roads	Signal Controller Updates to IP Address able	Coordination to signals without communications	948	3,000			Over 2 years	TBD
P-38		Transportation	Transportation Infrastructure	Replacement of Elbow River Traffic Bridges Mission - 4th Street bridge	Replacement to increase bridge height to reduce debris build-up which creates barriers for water flow	949	16,000			Over 2 years	TBD
P-39		Transportation	Transportation Infrastructure	Replacement of Elbow River Traffic Bridges 24th Avenue- Scollen Bridge	Replacement to increase bridge height to reduce debris build-up which creates barriers for water flow	949	9,000			Over 2 years	TBD
P-40		Transportation	Transportation Infrastructure	Replacement of Elbow River Traffic Bridges Pattison (Macleod Trail)	Replacement to increase bridge height to reduce debris build-up which creates barriers for water flow	949	9,200			Over 2 years	TBD
P-41		Transportation	Transportation Infrastructure	Replacement of Elbow River Traffic Bridges Victoria (Macleod Tr)	Replacement to increase bridge height to reduce debris build-up which creates barriers for water flow	949	12,000			Over 2 years	TBD
P-42		Transportation	Transportation Infrastructure	Replacement of Elbow River Traffic Bridges Elboya	Replacement to increase bridge height to reduce debris build-up which creates barriers for water flow	949	9,700			Over 2 years	TBD
P-43		Utilities & Environmental Protection	UEP - Water	Bonnybrook WWT Plant	Flooding protection for Bonnybrook WWT plant, to maintain continuity of plant operations in future flood events	952	7,000			Over 2 years	TBD

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-44		Utilities & Environmental Protection	UEP - Water	Bonnybrook WWT Outfall	Moving the outfall to a location less susceptible to impacts from flooding	952	43,000			Over 2 years	TBD
P-45		Utilities & Environmental Protection	UEP - Water	Bonnybrook WWT On-site bypass		952	3,000			Over 2 years	TBD
P-46		Utilities & Environmental Protection	UEP - Water	Bonnybrook Flood Protection Berm	Protection for Bonnybrook WWT Plant from overland flooding to maintain continuity of plant operations	952	10,000			Over 2 years	TBD
P-47		Utilities & Environmental Protection	UEP - Water	Glenmore Reservoir Modifications	Measures to increase storage capacity to limit downstream impacts on the Elbow River	952	50,000			Over 2 years	TBD
P-48		Utilities & Environmental Protection	UEP - Water	Sunnyside Community Improvement: Riverbank stabilization	Riverbank stabilization to increase flood resiliency in the community	952	9,400				TBD
P-49		Utilities & Environmental Protection	UEP - Water	Sunnyside Community Improvement: Community Drainage Projects to increase flood resiliency in the community	Community Drainage Projects	952	115,000				TBD
P-50		Utilities & Environmental Protection	UEP - Water	Stormwater outfall improvements	Opportunities for backflow prevention to limit water backing up from storm system into neighbourhoods including opportunities for	952	2,000			Over 2 years	TBD

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
					electromechanical gates to increase response time in the event of high water flow						
P-51		Utilities & Environmental Protection	UEP - Water	Stormwater and Sanitary Lift Station Upgrades	To improve resiliency of stormwater and sanitary lift stations in the event of flooding, primarily to protect electrical systems, to maintain continuity of operations and/or expedite recovery time following flooding	952	6,500			Over 2 years	2014
P-52		Utilities & Environmental Protection	UEP - Water	Permanent flood berms and dikes	Installation of permanent berms and dikes will enhance flood protection in various communities as determined by River Flood Protection Conceptual Design Study. Estimated cost range \$100,000-\$200,000	952	200,000			Over 2 years	TBD
P-53		Utilities & Environmental Protection	UEP - Water	Glenmore Bypass to Bow River	Benefits from bypass from the Elbow River to Bow River to be determined by feasibility study	952	300,000			Over 2 years	TBD
P-54		Utilities & Environmental Protection	UEP - Water	River and weather monitoring/forecasting enhancements; equipment, software, etc.	Equipment to supplement and enhance provincial forecasting and monitoring system	952	1,500			Over 2 years	TBD

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-55	C21	Calgary Police Service	Calgary Police Service	Relocate CPS Arrest Processing Unit from the downtown location to Spyhill	This project has partial funding only. This project would eliminate the risk and exposure of having the CPS Arrest Processing functions in the downtown core. The Arrest Processing Unit is fundamental to CPS operations and was flooded in 2013 causing significant operational problems during the initial response phase to the flood. \$12 million would move APU from the flood plain to a secure location.	953	12,000			1 - 2 years	2015
P-56	C22	Calgary Police Service	Calgary Police Service	Mobile Command Support Vehicle and Trailers	This project would provide command/logistic support at disaster site(s).	953	1,300			1 - 2 years	2015
P-57	C23	Calgary Police Service	Calgary Police Service	Radio System - Tower Equipment upgrade	Upgrade the Quantar Repeaters that exist at each radio tower and provide the channels for the system but have reached the end of manufacturers support. This will help ensure system remains viable until at least 2020	953	1,600			6 - 12 months	2014
P-58	C24	Calgary Police Service	Calgary Police Service	Radio System - Additional Site	Provide additional coverage to Public Safety users in far North Central Calgary	953	1,000	070	30	1 - 2 years	2015

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
P-59		Planning, Development & Assessment	Land Use Planning and Policy	Increase public safety, reduce property damage and enhance the city's flood resiliency through land use policies and bylaws. Council directed Administration to conduct a review and risk analysis of the way The City controls development within the Flood Hazard Area (FHA) and to subsequently bring forward amendments to the Municipal Development Plan (MDP) policy and changes to the rules of the Land Use Bylaw (LUB) 1P2007, with a focus on reducing risk and improving the city's resiliency to future flood events, as well as undertake longer-term work to examine future uses within the FHA.	Increased public safety, reduce property damage and enhance the city's flood resiliency through land use planning and regulation.				202	Over 2 years	2014
City of Calgary Total							<u>\$894,830</u>		<u>\$906</u>		

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
ENMAX SUBMISSION											
P-59		ENMAX		ENMAX 32 Substation Bow River Crossings	Flood resilience of ENMAX infrastructure crossing the Bow River at Substation 32 (Serving South Calgary Communities)		5,200		Incremental costs (if any) to be absorbed in existing operating budgets	Over 2 years	TBD
P-60		ENMAX		Remote Electrical Service Disconnect/Reconnect Capability	Remote connect and disconnect capability for flood affected businesses and residences outside of Calgary downtown		2,700		Incremental costs (if any) to be absorbed in existing operating budgets	Over 2 years	TBD
P-61		ENMAX		Downtown Electrical Outage Resilience	Improve the ability of ENMAX to reduce the impact of flooding on downtown businesses and residences		5,000		Incremental costs (if any) to be absorbed in existing operating budgets	Over 2 years	TBD
P-62		ENMAX		DBA/ENMAX Task Force Information System	Improve the ability of Development and Building Approvals (DBA)/ENMAX Joint task forces to manage and report to the Emergency Operations Centre on the status of electrical disconnection and reconnection of businesses and residences in flood		1,000		Incremental costs (if any) to be absorbed in existing operating budgets	1 - 2 years	TBD

Submissions to Provincial Mitigation/Resiliency Program Funding (000's)

Identifier	Category #	Department	Business Unit	Project Summary	Project Outcome (Benefits)	Capital Program #	Capital Budget (000's)	Operating Program #	Annual Operating Budget (000's)	Estimated Duration	Implementation Timing (Budget Cycle)
					affected areas						
P-63		ENMAX		CEMA/ENMAX GIS/OMS Interoperability	Improve interoperability of the ENMAX Geographic Information System (GIS) and Outage Management System (OMS) with the Calgary Emergency Management Agency Common Operating Picture		4,000		Incremental costs (if any) to be absorbed in existing operating budgets	1 - 2 years	TBD
P-64		ENMAX		ENMAX Downtown District Energy Facility	Improve resiliency of infrastructure supplying heat to downtown businesses and residences		1,000		Incremental costs (if any) to be absorbed in existing operating budgets	1 - 2 years	TBD
P-65		ENMAX		ENMAX 05 Substation Hardening	Flood-proof ENMAX 05 Substation to limit the impact of flooding on the electricity supply of downtown businesses and residences		2,400		Incremental costs (if any) to be absorbed in existing operating budgets	1 - 2 years	TBD
P-66		ENMAX		Automation of Electricity Infrastructure	Ensure a speedy and more precise isolation of electricity power in residential areas that are prone to flood hazards		2,900		Incremental costs (if any) to be absorbed in existing operating budgets	Over 2 years	TBD
Total Enmax							<u>\$24,200</u>				

Note: Many of the Operating & Capital Budgets need to be split over more than one year.