

## Draper

Singular and combined risk treatments for Draper are shown in Table 13 below. While there is currently no plan to provide flood mitigation for this community, leaving existing homes unprotected is not consistent with the defined tolerable risk level. A rough estimate for the work was generated for evaluation purposes.

**Table 13: Draper Policy Options (risk treatments and combinations)**

Risk Treatments	Policy Options					
	Flood Mitigation Only	Flood Mitigation & LUB Provisions	Flood Mitigation, LUB Provisions & Limited Development below 250m	Flood Mitigation, LUB Provisions & Buyout Below 250m / Land Swap	LUB Provisions & Buyout Below 250m / Land Swap	Buyout all properties / Land Swap
Flood Mitigation Strategy	X	X	X	X		
Land Use Provisions		X	X	X	X	
No new (prospective) development below 250 m			X			
Buy out / land swap all properties below 250 m				X	X	
Buy out / land swap all properties in community						X

### Key Points

1. No structural flood mitigation is planned for this community.
2. Flood mitigation around built-up areas is estimated to cost \$118 million.
3. Population is 187 as of the 2018 Census and consists of 98 private properties.
4. 64 private properties (65% of the total) are below the 250m elevation, of which 34 are developed.
5. 34 private properties (35% of the total) are above the 250m elevation, of which 28 are developed.
6. 33 private properties (34%) were affected during the Horse River Wildfire, of which 9 have rebuilt (9%).

**Table 14: Draper Evaluation Matrix**

Evaluation Criteria		Weight	Policy Options Evaluation					
			Flood Mitigation Only	Flood Mitigation & LUB Provisions	Flood Mitigation, LUB Provisions, & Limited Development below 250m	Flood Mitigation, LUB Provisions, & Buyout Below 250m / Land Swap	LUB Provisions & Buyout Below 250m / Land Swap	Buyout all properties / Land Swap
Minimize Cost		4	6	6	6	9	1	1
Minimize Residual Risk	Social	1	6	5	4	2	3	1
	Built	1	6	5	4	2	3	1
	Economic	1	6	5	4	2	3	1
	Natural	1	6	5	4	3	2	1
Total Score			48	44	40	45	15	8
Total Treatment Cost			\$118M	\$118M	\$118M	\$166.8M	\$48.8M	\$76.9M
Flood Mitigation Costs			\$118M	\$118M	\$118M	\$118M	~	~
Buyout Costs			~	~	~	\$40M	\$40M	\$60.3M
Reclamation Costs			~	~	~	\$8.8M	\$8.8M	\$16.6M
Total Cost Saved			~	~	~	~	\$118M	\$150.3M
Flood Mitigation			~	~	~	~	\$118M	\$118M
Rural Water Sewer Servicing			~	~	~	~	~	\$27M
Private Service Connections			~	~	~	~	~	\$5M
Community Gathering Place			~	~	~	~	~	\$300,000
Net Cost			\$118M	\$118M	\$118M	\$166.8M	\$0.00	\$0.00
Net Cost Per Capita			\$1,573	\$1,573	\$1,573	\$2,224	\$0.00	\$0.00

**Table 15: Draper Cost Scale**

Cost Bracket	Score	Cost Bracket	Score
< \$20 million	1	100 – 119 million	6
20 – 39 million	2	120 – 139 million	7
40 – 59 million	3	140 – 159 million	8
60 – 79 million	4	160 – 179 million	9
80 – 99 million	5	180 – 199 million	10

## Proposed Approach for Draper

1. According to Table 13, the proposed approach is a community-wide **buyout of all properties**. This option may be considered for the following reasons:
  - a) It is the safest solution from a life-safety perspective. If the area was not bought out, not only would residents be trapped during a future 1:100 or higher flood event (Draper Road would be covered by water and impassable), but first responders would have difficulty accessing properties and would be putting their own lives in danger if the need to access a flooded property arose.
  - b) While a full buyout would cost a minimum of \$60.4 million based on 2020 assessed values, the **cost would be significantly offset by the \$32 million saved by not proceeding with the Draper portion of the Rural Water Sewer Servicing project** (which will be introducing services to Draper at a cost of \$27 million, plus \$5 million for providing private connections). This cost-saving would not be realized if only the properties below 250m were bought out, as 34 remaining properties would still have to be serviced.
  - c) The buyout would also be **entirely offset by the cost savings realized by not providing flood mitigation**. It is impractical to provide property-specific protection (such as ring dykes around homes), making a berm protecting larger groups of homes the only viable option. This collection of berms carries a significant estimated cost of nearly \$118 million.
  - d) The RMWB need not proceed with a community gathering place, budgeted at \$300,000.
  - e) Draper is also characterized by homes that are built upon and near a slope with geotechnical concerns. A buyout of not only flood-hazard lands but also properties on steep slopes would eliminate more than just risks from flood, but also slope failure.
7. The proposed policy for Draper is to remove all people and property from the area thus completely avoiding the hazard, maximizing disaster risk reduction, and increasing community resilience over the long-term.
8. Potential future uses may include naturalization of the area, or pursuit of agricultural activities throughout the floodplain, as Draper is the RMWB's only source of fertile, farmable land. With residential properties no longer in the area, land use conflicts would be minimized.

### What degree of residual risk remains from overland flooding?

1. Little residual risk remains, as private properties and structures have been removed from the flood hazard area. Residual risks would be limited to remediation of any low-impact uses that may be established.

### What was the cost of the risk reduction?

1. Achieving this risk reduction carries no additional cost to taxpayers, owing to the cost-savings realized by not providing flood protection, and not proceeding with capital projects. This does not include the cost of procuring land for a land swap, as this is an optional step which may or may not be pursued; it therefore does not affect the evaluation of this risk treatment.
2. Reclamation costs are estimated to be about \$16 million, but a significant portion (nearly \$5 million) includes grading and landscaping. These costs would depend on the future use of the area and may not need to be accounted for if the area is allowed to return to its natural state.

### What new risks (if any) are generated by the risk treatment?

1. No new risks are anticipated by buying out the area.

## Appendix G: Draper

### 1. Demography:

Details	Municipal Census 2015	Municipal Census 2018
Population	215	187
No. of dwellings	64	57

### 2. General: Wildfire/Flood affected:

Sr. No	Task	Total
1	Total Properties Analysed	98 (100%)
2	Wildfire unaffected (Empty Lots + developed)	65 (66%)
3	Wildfire affected	33 (34%)
4	Total No. of rebuilt after wildfire 2016	9 (9%)
5	Flood Effectuated	51 (52%)

### 3. Property Assessment:

Private Properties in Draper Neighborhood				Assessment value
Details	Developed	Vacant	Total	
<b>Total Private Properties</b>	<b>62 (63%)</b>	<b>36 (37%)</b>	<b>98 (100%)</b>	<b>60,304,000</b>
Below 250 mt. contour level	34 (35%)	30 (31%)	64 (65%)	39,934,590
Above 250 mt. contour level	28 (29%)	6 (6%)	34 (35%)	20,369,410
<b>Properties Affected by Wildfire 2016</b>	<b>24 (24%)</b>	<b>9 (9%)</b>	<b>33 (34%)</b>	<b>25,216,710</b>
Below 250 mt. contour level	14 (14%)	7 (7%)	21 (21%)	17,130,010
Above 250 mt. contour level	10 (10%)	2 (2%)	12 (12%)	8,086,700
<b>Rebuilt</b>	<b>9 (9%)</b>	<b>N/A</b>	<b>9 (9%)</b>	<b>9,039,390</b>
Below 250 mt. contour level	7 (7%)	N/A	7 (7%)	7,320,240
Above 250 mt. contour level	2 (2%)	N/A	2 (2%)	1,719,150
<b>Properties Affected by Flood 2020</b>	<b>19 (19%)</b>	<b>32 (33%)</b>	<b>51 (52%)</b>	<b>31,413,760</b>
Below 250 mt. contour level	19 (19%)	31 (32%)	50 (51%)	30,317,630
Above 250 mt. contour level	0 (0%)	1 (1%)	1 (1%)	1,096,130

**Note:** All % values are in reference of no. of total properties.

### 4. Total Property Assessment:

Sr No.	Type	Status	Assessment Value	Total Assessment Value
1	Private	Undeveloped	15,797,630	<b>60,304,000</b>
		Developed	44,506,370	
	<b>Grand Total Assessment Value</b>			<b>60,304,000</b>

### 5. Reclamation Cost for Properties Below 250M Contour:

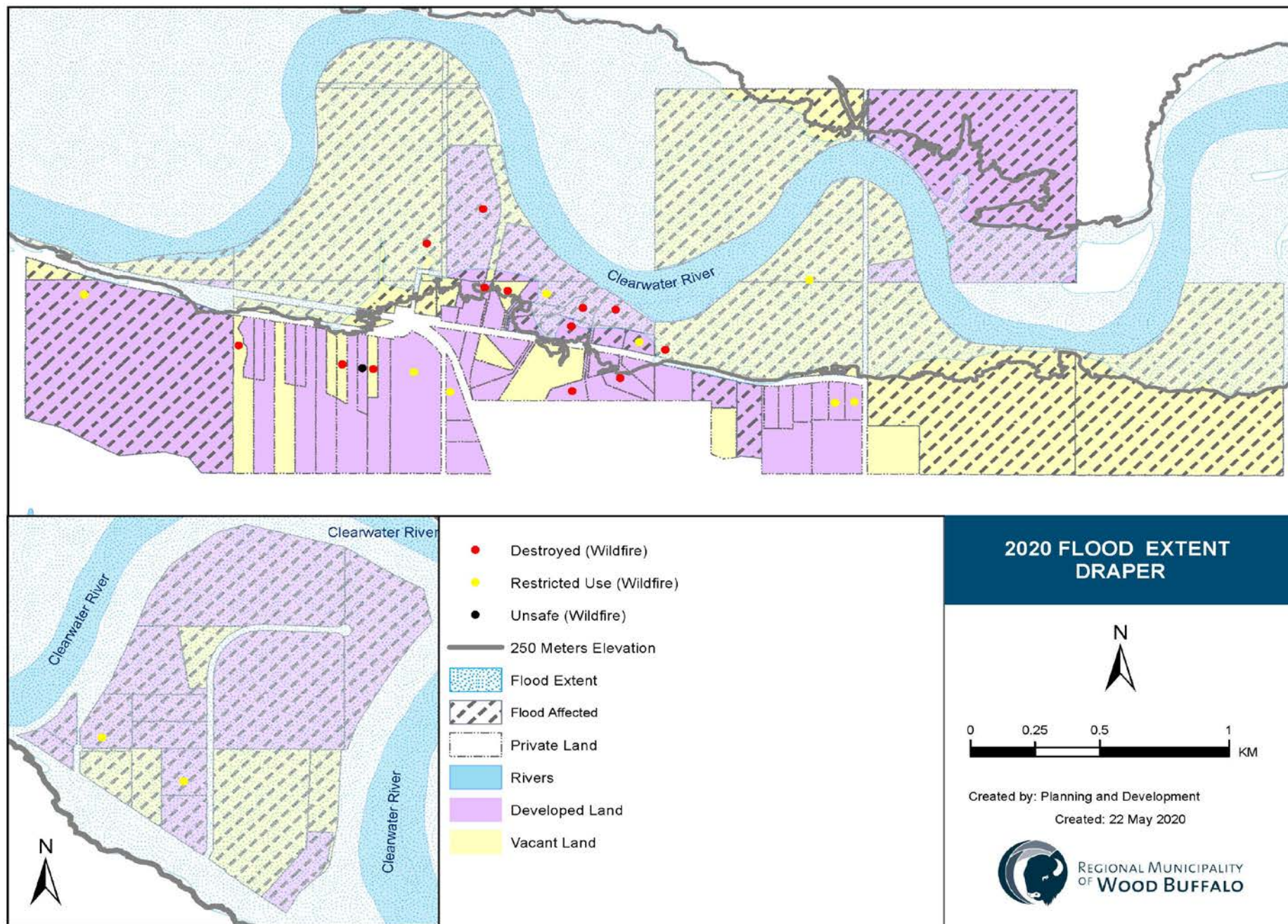
Sr. No	Item	Description	Quantity	Unit Measurement	Unit Rate	Total Cost
1	House Demo	House removal and disposal	34	each	120,000.00	4,080,000
2	Accessory/Building	Removal of accessory building	34	each	15,000.00	510,000
3	Cut and cap	Deep utility cut and capping at property line (Water and Sewer)	0	each	20,000.00	0.00
4		Cut and Cap for commercial at property line (Water and Sewer)	0	each	30,000.00	0.00
5	*Grading/Contouring	Levelling lots post demo and landscaping	136,000	sq.m	20.00	2,720,000
	TOTAL					7,310,000.00
	Engineering Fees	10%				731,000.00
	Contingency	10%				731,000.00
(D)	GRAND TOTAL					8,772,000.00

### 6. Average Assessment for Private Properties Below 250M Contour Level:

(A) Status	(B) Number of Properties	(C) Assessment Value	(D) Reclamation Cost	(C+D=E) Total Value	(E/B) Average Per Capita Value
Developed	34	\$26,935,290.00	\$8,772,000.00	\$35,707,290.00	\$1,050,214.41
Undeveloped	30	\$12,999,300.00	\$0.00	\$12,999,300.00	\$433,310.00
Total	64	\$39,934,590.00		\$48,706,590.00	\$761,040.47



## FLOOD EXTENT MAP FOR DRAPER



## 7. Reclamation Cost for Private Properties in Draper:

Sr. No	Item	Description	Quantity	Unit Measurement	Unit Rate	Total Cost
1	House Demo	House removal and disposal	62	each	\$120,000.00	\$7,440,000.00
2	Accessory/Building	Removal of accessory building	62	each	\$15,000.00	\$930,000.00
3	Cut and cap	Deep utility cut and capping at property line (Water and Sewer)	0	each	\$20,000.00	\$0.00
4		Cut and Cap for commercial at property line (Water and Sewer)	0	each	\$30,000.00	\$0.00
5	*Grading/Contouring	Levelling lots post demo and landscaping	248,000	sq.m	\$20.00	\$4,960,000.00
	TOTAL					\$13,330,000.00
	Engineering Fees	10%				\$1,333,000.00
	Contingency	10%				\$1,333,000.00
(D)	GRAND TOTAL					\$15,996,000.00

## 8. Average Assessment for Private Properties in Draper:

(A) Status	(B) Number of Properties	(C) Assessment Value	(D) Reclamation Cost	(C+D=E) Total Value	(E/B) Average Per Capita Value
Developed	62	\$45,602,500.00	\$15,996,000.00	\$61,598,500.00	\$993,524.19
Undeveloped	36	\$14,701,500.00	\$0.00	\$14,701,500.00	\$408,375.00
Total	98	\$60,304,000.00	\$15,996,000.00	\$76,300,000.00	\$778,571.43