### **Sussex Flood Risk Mitigation Master Plan**

September 10, 2020







**Public Presentation** 





### Outline

- Project History
- Future vs Historic Flood Risk
- Flood Risk Mitigation Projects
  - Gateway Mall Flood Berm
  - Trout Creek Flood Berm
  - East Town Limit Flow Diversion Channel
  - Parson Brook Flow Diversion Channel
  - Storm Sewer Upgrades (NW and NE)
- Next Steps





### **Project History**

- Repeated flooding culminating in 2014 and 2015 floods
- Studied historic flood risk and quantified future flood risks
- Updated flood risk mapping
- Identified and evaluated flood risk mitigation projects
- Constructed Gateway Mall Flood Berm
- Developed regional flood risk mitigation plan







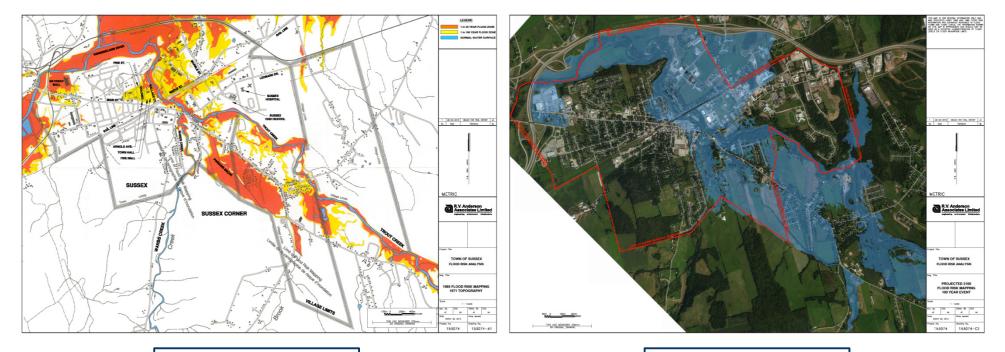
#### **Future vs Historic Flood Risk**

- Year 2100 flood flows increase by 14.5% to 16.6% with:
  - Reduced ice jam flooding
  - Reduced winter and spring flooding
  - Increased fall flooding
- Year 2100 increases in flood levels:
  - 20 year event: 0.18 m to 0.29 m
  - 100 year event: 0.25 m to 0.36 m





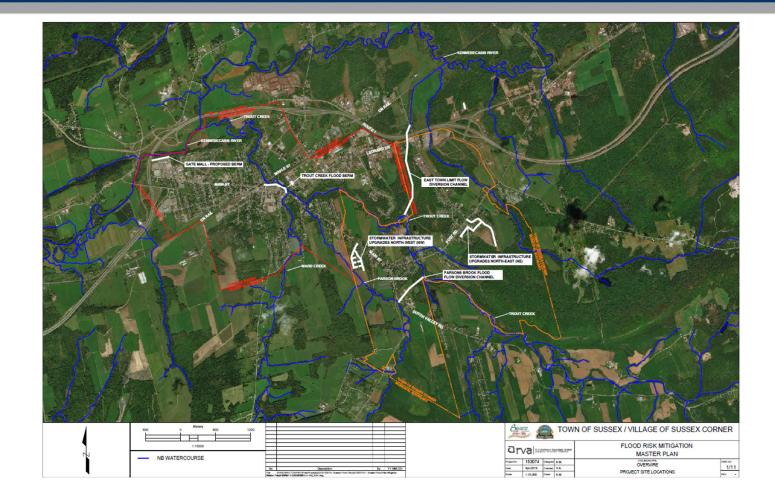
#### **Future vs Historic Flood Risk**



1985 Flood Risk Map

2100 Flood Risk Map

# **Flood Risk Mitigation Projects**



### **Flood Risk Mitigation Projects**

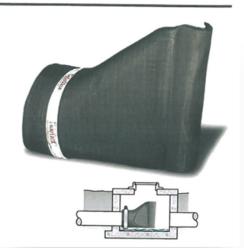
Project Title	Project Cost
Gateway Mall Flood Mitigation Berm	\$1,600,000
Trout Creek Flood Mitigation Berm	\$2,500,000
East Town Limit Flood Flow Diversion Channel	\$16,000,000
Parson Brook Flood Flow Diversion Channel	\$1,800,000
Stormwater Infrastructure Upgrades (NW)	\$1,600,000
Stormwater Infrastructure Upgrades (NE)	\$1,600,000
Total Project Cost (excl. HST)	\$25,100,000

#### Gateway Mall Flood Berm (constructed in 2019)

	Gateway Mall Area		
	April 2014	Flood Study 2016	Flood Mitigation Berm 2019
	Flood Elev.	Future Flood Elev.	Design Flood Mitigation Elev.
	17.29 m	17.73 m	18.10 m
Project Consisted of:			
• ± 12,000 m <sup>3</sup> of berm construction.			
<ul> <li>Removed CSP culverts &amp; replaced with storm sewers.</li> <li>Constructed pumping station to handle storm runoff during flood conditions.</li> <li>Replaced main storm sewer outfall and installed Duckbill backflow valve.</li> <li>Constructed culvert along Route 1 and installed Duckbill backflow</li> <li>Mobile pumping unit to handle storm runoff during flood condition</li> </ul>	valve.		

### Gateway Mall Duckbill Valves



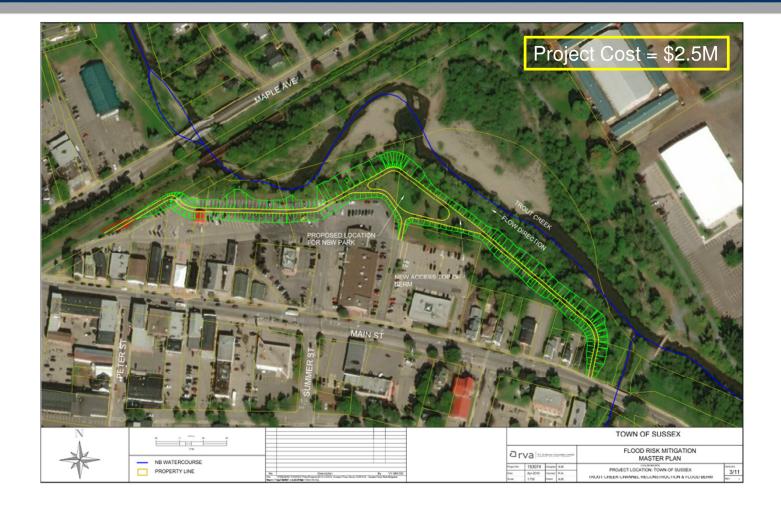


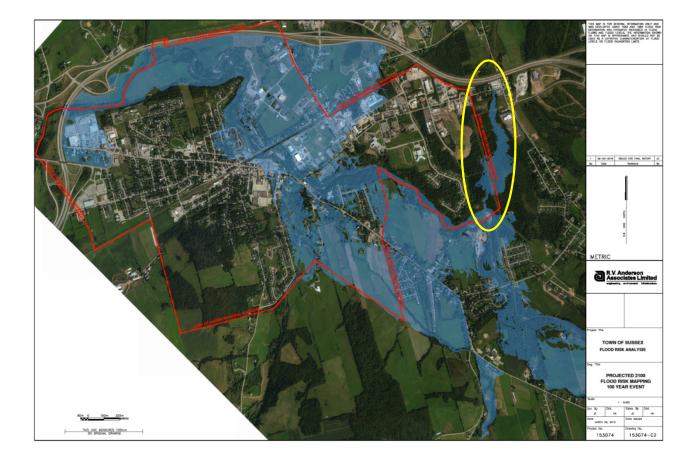


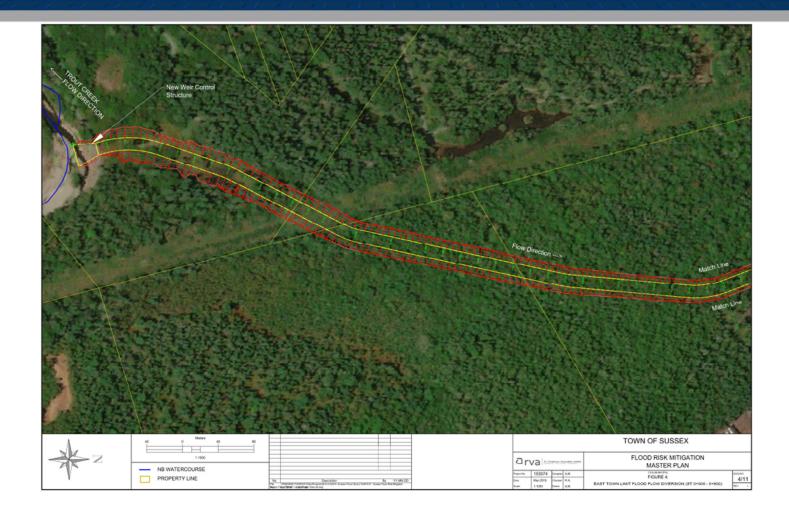
## Gateway Mall Flood Berm (constructed in 2019)



#### **Trout Creek Flood Berm**

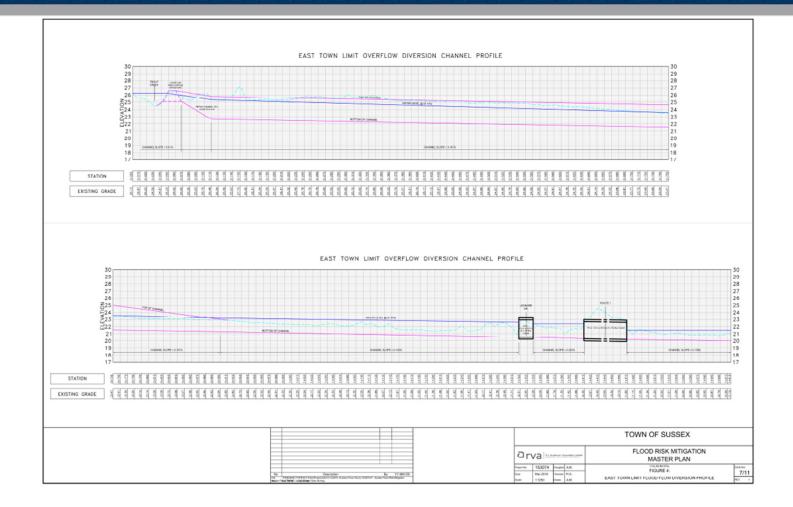




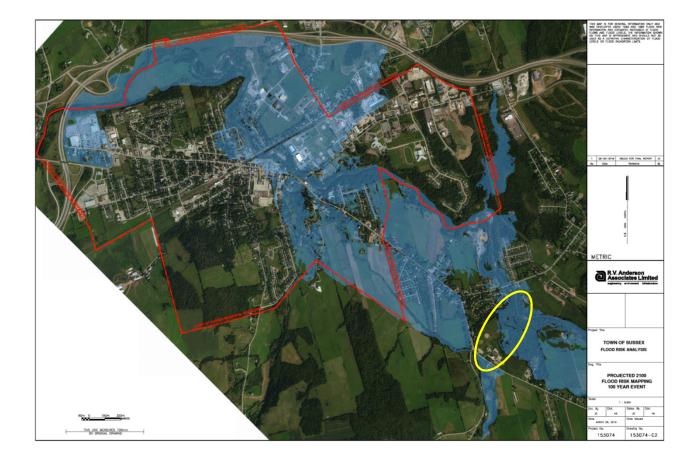




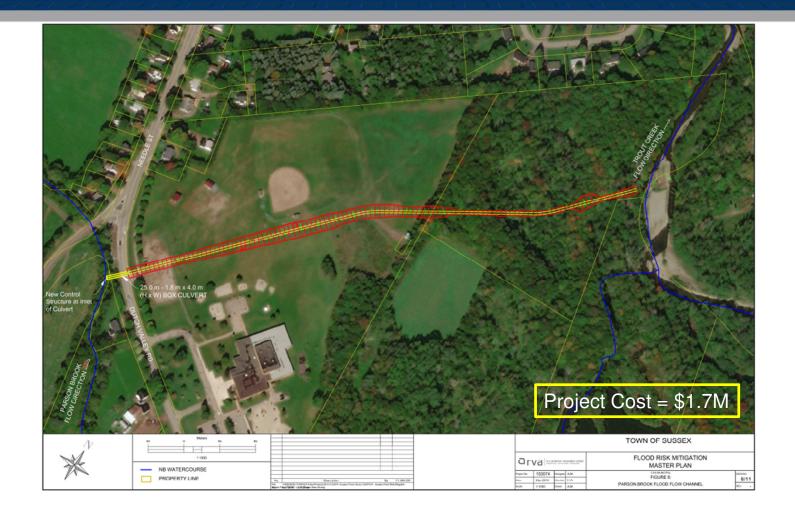




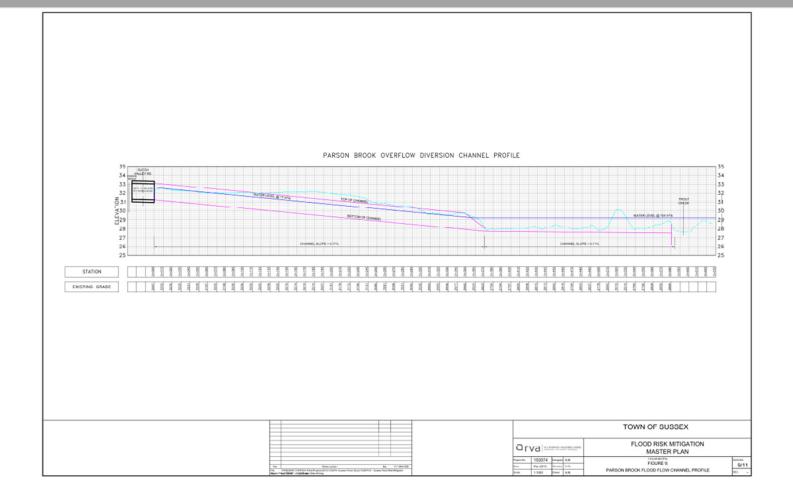
#### **Parson Brook Flow Diversion Channel**



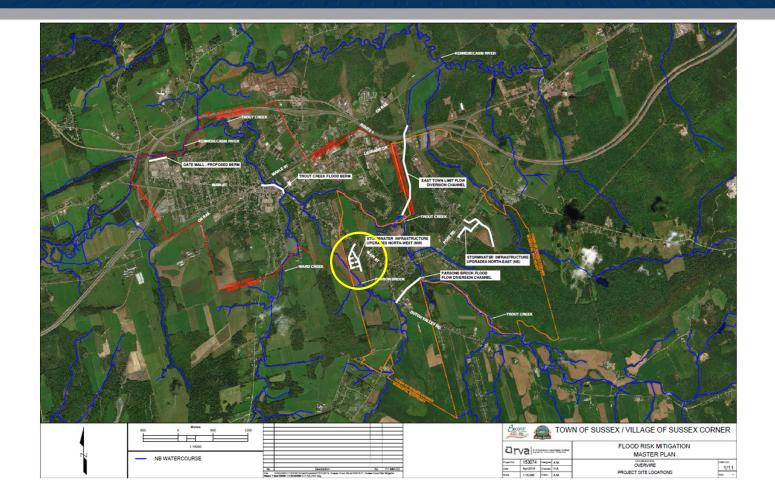
#### **Parson Brook Flow Diversion Channel**



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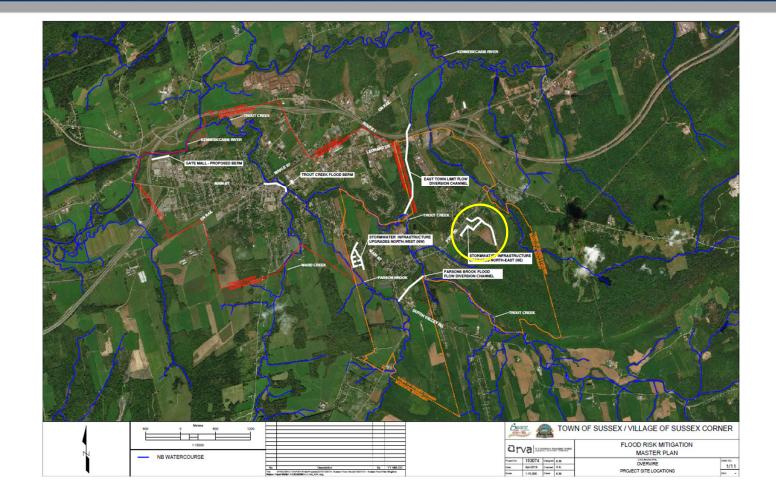
# **Flood Risk Mitigation Projects**



### **Stormwater Infrastructure Upgrades (NW)**



# **Flood Risk Mitigation Projects**



#### **Stormwater Infrastructure Upgrades (NE)**



#### **Next Steps**

#### Identify next project(s)

Project Title	Project Cost
Gateway Mall Flood Mitigation Berm	<del>\$1,600,000</del>
?? Trout Creek Flood Mitigation Berm ??	\$2,500,000
?? East Town Limit Flood Flow Diversion Channel ??	\$16,000,000
?? Parson Brook Flood Flow Diversion Channel ??	\$1,800,000
?? Stormwater Infrastructure Upgrades (NW) ??	\$1,600,000
?? Stormwater Infrastructure Upgrades (NE) ??	\$1,600,000
Total Project Cost (excl. HST)	\$25,100,000

- Confirm flood risk changes (plus and minus)
- Confirm return on investment (\$\$ saved per \$ spent)
- Apply for Federal and Provincial funding

#### **Questions and Comments**

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