

## Mitigation Actions Presently in Hazard Mitigation Plan

| Mitigation Action   | Storm Shelter and Safe Room  |
|---------------------|--|
| Description         | Design and construct fully supplied storm shelters and safe rooms at recreation areas. |
| Hazard(s) Addressed | Tornadoes and High Winds, Severe Thunderstorms   |
| Estimated Cost      | \$200-\$300/sf stand alone, \$150-\$200/sf addition/retrofit                           |

| Mitigation Action   | Hazardous Tree Removal  |
|---------------------|---|
| Description         | Identify and remove hazardous limbs and/or trees along trails and recreational areas. |
| Hazard(s) Addressed | Tornadoes and High Winds, Severe Thunderstorms, Severe Winter Storms                  |
| Estimated Cost      | \$100+ per tree   |

| Mitigation Action   | Levee/Floodwall Construction and/or Improvements  |
|---------------------|---|
| Description         | Improve existing flood control structures to meet community needs or construct additional/new flood control measures. |
| Hazard(s) Addressed | Flooding, Levee Failure   |
| Estimated Cost      | Varies depending on scope   |

| Mitigation Action   | Stormwater System and Drainage Improvements   |
|---------------------|---|
| Description         | Undersized systems can contribute to localized flooding. Stormwater system improvements, such as pipe upsizing and additional inlets, |
| Hazard(s) Addressed | Flooding  |
| Estimated Cost      | \$100,000+  |

| Mitigation Action   | Flood-Prone Property Acquisition   |
|---------------------|--|
| Description         | Voluntary acquisition and demolition of properties prone to flooding will reduce the general threat of flooding for communities. |
| Hazard(s) Addressed | Flooding   |
| Estimated Cost      | Varies by number of properties   |

| <b>Mitigation Action</b>   | <b>River / Stream Bank Stabilization</b>  |
|----------------------------|---|
| <b>Description</b>         | Bank degradation is occurring along many rivers and creeks. Stabilization improvements including rock, rip rap, vegetative cover, j-hooks, boulder vanes, etc. can be implemented to reestablish the channel banks. |
| <b>Hazard(s) Addressed</b> | Flooding  |
| <b>Estimated Cost</b>      | Varies  |

| <b>Mitigation Action</b>   | <b>Dam Engineering and Analysis / Reports and Reinforcement</b>           |
|----------------------------|---|
| <b>Description</b>         | Conduct analysis of dam structures and identify necessary reinforcements. |
| <b>Hazard(s) Addressed</b> | Dam Failure, Flooding   |
| <b>Estimated Cost</b>      | Varies  |

| <b>Mitigation Action</b>   | <b>Irrigation / Groundwater Management Plan</b>   |
|----------------------------|---|
| <b>Description</b>         | Establish a plan to reduce total consumption of groundwater resources by irrigators of agricultural land across the district. |
| <b>Hazard(s) Addressed</b> | Drought   |
| <b>Estimated Cost</b>      | \$10,000+   |

| <b>Mitigation Action</b>   | <b>Source Water Protection Plan</b>  |
|----------------------------|--|
| <b>Description</b>         | Evaluate and locate new sources of groundwater to ensure adequate supplies to support any additional growth which may occur. |
| <b>Hazard(s) Addressed</b> | Drought  |
| <b>Estimated Cost</b>      | \$5,000+   |
| <b>Funding</b>             | Tax Levy   |

| <b>Mitigation Action</b>   | <b>Public Awareness / Education</b>   |
|----------------------------|---|
| <b>Description</b>         | Through activities such as outreach projects, distribution of maps and environmental education, increase public awareness of natural hazards to both public and private property owners, rents, businesses, and local officials about hazards and ways to protect people and property from these hazards. |
| <b>Hazard(s) Addressed</b> | All Hazards   |
| <b>Estimated Cost</b>      | \$500+  |

## Mitigation Actions to be Added in 2020 Plan update

### Backup Generator for NRD Office

If the NRD office loses electricity it shuts down the Computer and phone system which would be critical in a major storm/runoff event when staff is monitoring dam s and recreation areas.

**Estimated Cost** \$10,000

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### Improvements to Trails to reduce Impacts from Flooding

This could include projects such as hard surfacing, raising or even relocation of flood prone segments.

**Estimated Cost:** Varies by project

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### Warning Sirens for Recreation Areas

Install warning sirens at Iron Horse and Kirkman's Cove

**Estimated Cost:** \$25,000 per siren