# Preliminary Hydrology Output Data Summary

for

## Silver Creek Flood Control District

at

## Millet Swale Dam

**Ironside Engineering Project No. 42901**

**December 2022**

**Prepared for:**
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# 1958 Model

Main Reservoir Volume

| Characteristic | Value |
|---|---|
| Estimated Main Reservoir Storage Capacity | 1,302 ac-ft |
| Estimated Percent Original Reservoir Capacity Silted | 0% |
| Estimated Acre-Feet of Silt Accumulated | 0 ac-ft |

Main Reservoir Outlet

| Event Frequency | Outlet Location | Value |
|---|---|---|
| 10-year event | Pipe Outlet | 5 cfs |
| | Auxiliary Spillway | 0 cfs |
| | Dam Breach | N/A |
| | **Total** | **5 cfs** |
| 25-year event | Pipe Outlet | 39 cfs |
| | Auxiliary Spillway | 366 cfs |
| | Dam Breach | N/A |
| | **Total** | **405 cfs** |
| 100-year event | Pipe Outlet | 39 cfs |
| | Auxiliary Spillway | 3510 cfs |
| | Dam Breach | N/A |
| | **Total** | **3,549 cfs** |

Bourdon Ranch Crossing

| Event Frequency | Characteristic | Value |
|---|---|---|
| 10-year event | Est. Flow Rate @ Bourdon Ranch | 411 cfs |
| 25-year event | Est. Flow Rate @ Bourdon Ranch | 821 cfs |
| 100-year event | Est. Flow Rate @ Bourdon Ranch | 3,642 cfs |

# 2021 Pre-Breach Model

Main Reservoir Volume

| Characteristic | Value |
|---|---|
| Estimated Main Reservoir Storage Capacity | 202 ac-ft |
| Estimated Percent Original Reservoir Capacity Silted | 84% |
| Estimated Acre-Feet of Silt Accumulated | 1100 ac-ft |

Main Reservoir Outlet

| Event Frequency | Outlet Location | Value |
|---|---|---|
| 10-year event | Pipe Outlet | 34 cfs |
| | Auxiliary Spillway | 1,483 cfs |
| | Dam Breach | N/A |
| | **Total** | **1,517 cfs** |
| 25-year event | Pipe Outlet | 38 cfs |
| | Auxiliary Spillway | 3,164 cfs |
| | Dam Breach | N/A |
| | **Total** | **3,202 cfs** |
| 100-year event | Pipe Outlet | 43 cfs |
| | Auxiliary Spillway | 5,961 cfs |
| | Dam Breach | N/A |
| | **Total** | **6,004 cfs** |

Bourdon Ranch Crossing

| Event Frequency | Characteristic | Value |
|---|---|---|
| 10-year event | Est. Flow Rate @ Bourdon Ranch | 1,545 cfs |
| 25-year event | Est. Flow Rate @ Bourdon Ranch | 3,278 cfs |
| 100-year event | Est. Flow Rate @ Bourdon Ranch | 6,170 cfs |

# 2022 Post-Breach Model

Main Reservoir Volume

| Characteristic | Value |
|---|---|
| Estimated Main Reservoir Storage Capacity | 202 ac-ft |
| Estimated Percent Original Reservoir Capacity Silted | 84% |
| Estimated Acre-Feet of Silt Accumulated | 1100 ac-ft |

Main Reservoir Outlet

| Event Frequency | Outlet Location | Value |
|---|---|---|
| 10-year event | Pipe Outlet | 19 cfs |
| | Auxiliary Spillway | 0 cfs |
| | Dam Breach | 2,281 cfs |
| | **Total** | **2,300 cfs** |
| 25-year event | Pipe Outlet | 25 cfs |
| | Auxiliary Spillway | 0 cfs |
| | Dam Breach | 4,058 cfs |
| | **Total** | **4,083 cfs** |
| 100-year event | Pipe Outlet | 28 cfs |
| | Auxiliary Spillway | 114 cfs |
| | Dam Breach | 7,039 cfs |
| | **Total** | **7,181 cfs** |

Bourdon Ranch Crossing

| Event Frequency | Characteristic | Value |
|---|---|---|
| 10-year event | Est. Flow Rate @ Bourdon Ranch | 2,352 cfs |
| 25-year event | Est. Flow Rate @ Bourdon Ranch | 3,278 cfs |
| 100-year event | Est. Flow Rate @ Bourdon Ranch | 7,432 cfs |

## 2022 Proposed Detention Basin Model

Proposed Design to include approximately **six** 50 ac-ft maximum detention basins located along each side of the primary inflow channel entering the existing reservoir.

Dam Breach Outlet Point* with Upstream Detention Basins

| Event Frequency | Outlet Location | Value | % +/- From 2021 Pre-Breach | % +/- From 2022 Post-Breach |
|---|---|---|---|---|
| 10-year event | Dam Breach Outlet | 1,417 cfs | -6.6% | -38.4% |
| 25-year event | Dam Breach Outlet | 3,101 cfs | -3.2% | -24.1% |
| 100-year event | Dam Breach Outlet | 6,342 cfs | +5.7% | -11.7% |

*Assumes existing dam does not significantly attenuate flows through dam break point