



White Paper: Types of Dams

There are five types of dams in the KTMPO region, each with different design standards and characteristics. One recommendation in the Regional Vulnerability & Resilience Framework (RVRF) is to monitor the condition of dams to establish a baseline and trends of dam attributes and of the conditions which may cause dam breaches or overtopping. Since dam attributes are based on their type, a listing of the types of dams present in the KTMPO region is a vital part of the RVRF inventories. Five general types of dams were observed in the region:

- Composite dams with spillways under the dam, shown in **Figure 1**. This type of dam has a spillway running under the dam structure, with water flowing at all times.
- Composite earth embankment dams with stone facings and bypass spillways, shown in **Figure 3**. The spillway has a relieving function for accommodating overflows; water does not normally flow in the spillway.
- Earth embankment dams with shaped berms, shown in **Figure 5**. Many of the Soil Conservation Service dams follow this pattern. This dam type features a high U-shaped or V-shaped berm above the normal water surface. In the event of an overflow, the shaped berm is more able to contain the water.
- Earth embankment dams with berms and bypass spillways, shown in **Figure 7**. The spillway has a relieving function for accommodating overflows; it is above the typical water level and water does not normally flow in the spillway. The bypass spillway is shaped to direct the water flow around the dam and into the stream channel below.
- Simple earth embankment dams, shown in **Figure 9**, is the most simple dam type. It has no berms, spillways, or other appurtenances.



Figure 1: Major Dam with Spillway

Composite dams with spillways under the dam are major dams as shown in **Figure 1**. **Figure 2** shows that there are two dams of this type in the region: the Belton Lake dam and the Stillhouse Hollow Lake dam.



Figure 2: Distribution of Major Dams

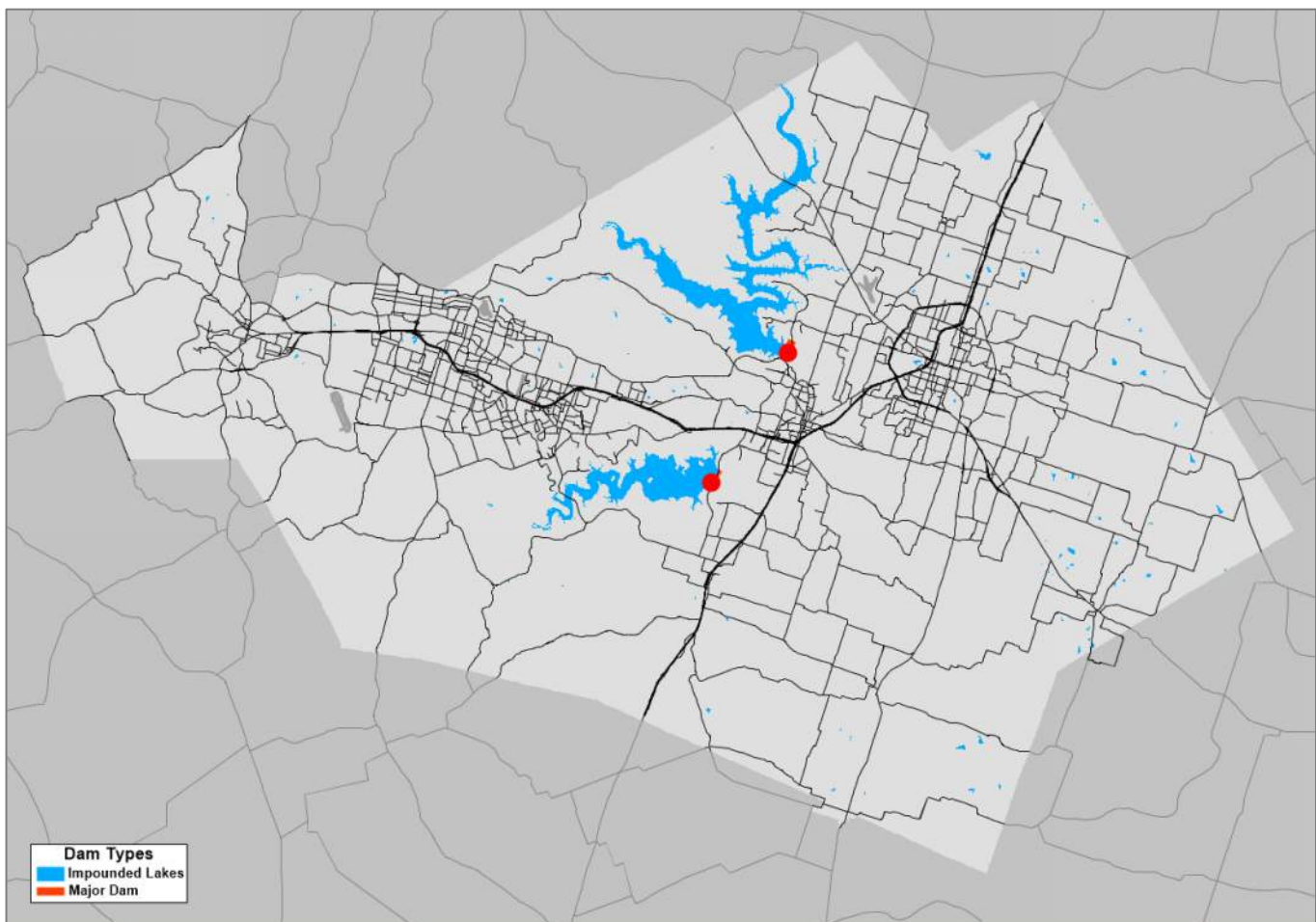


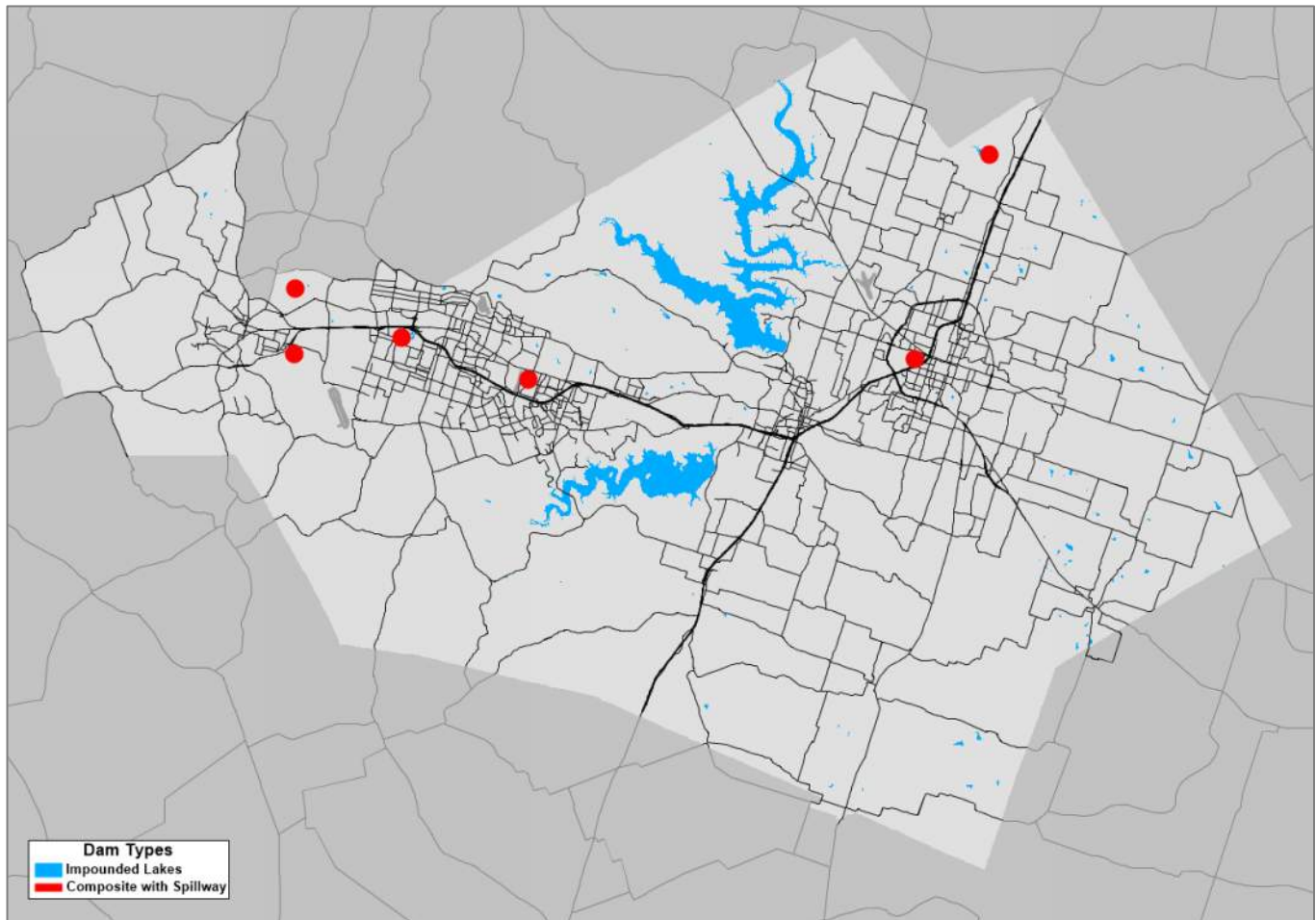


Figure 3: Composite Embankment Dam with Bypass Spillway

Composite earth embankment dams with stone facings and bypass spillways are shown in Figure 3. These have earth embankments, but they are faced with stone. As seen in Figure 4, there are six of this type of dam in the region.



Figure 4: Distribution of Stone-Faced Composite Dams



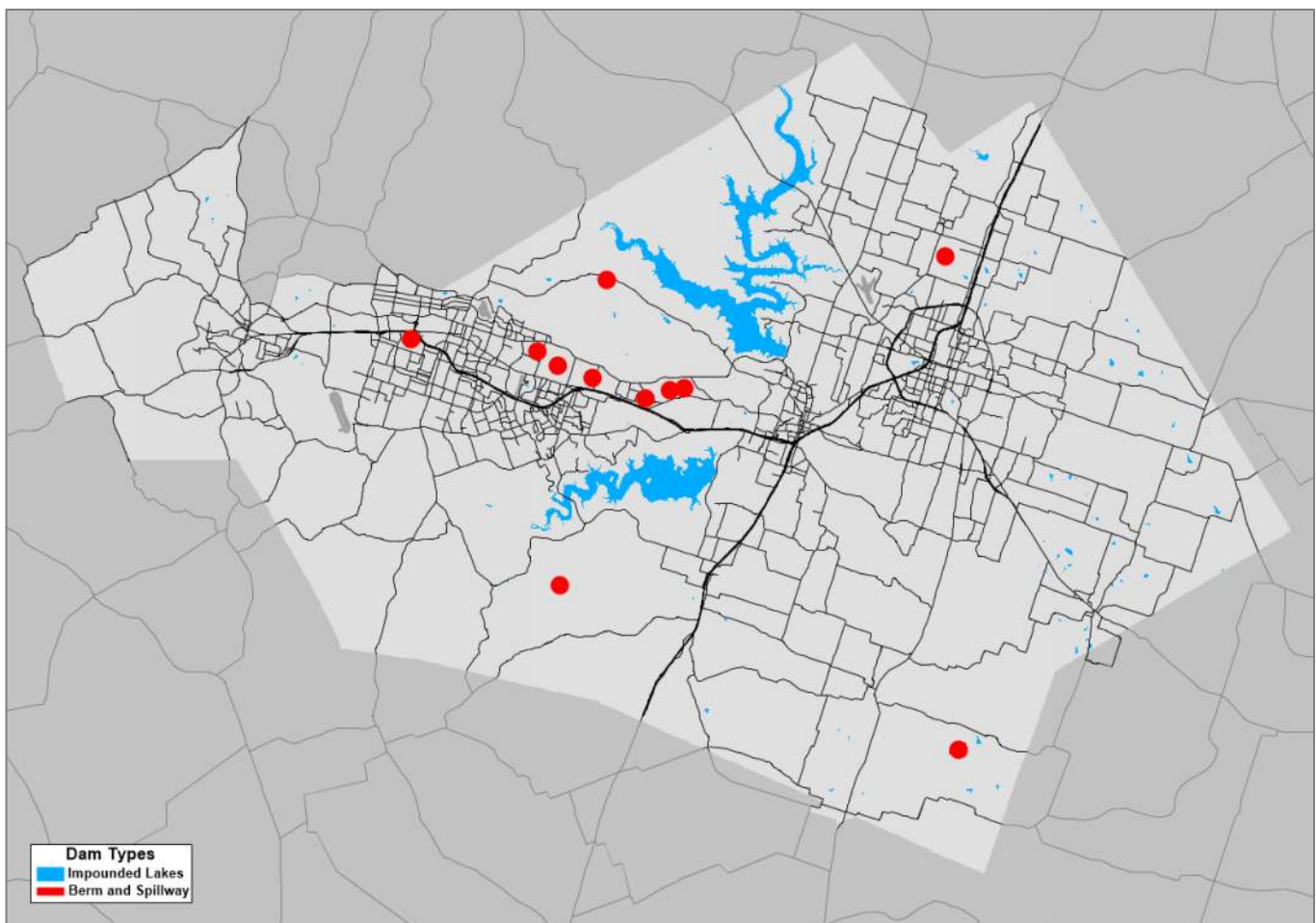


There are eleven dams in the region which are **earth embankment dams with shaped berms and spillways**. **Figure 5** shows this type of dam. The distribution throughout the region is shown in **Figure 6**. Nine of these are Soil Conservation Service Dams, and the other two are unnamed.

Figure 5: Earth Embankment Dam with Shaped Berms and Spillways



Figure 6: Distribution of Dams with Shaped Berms and Spillways





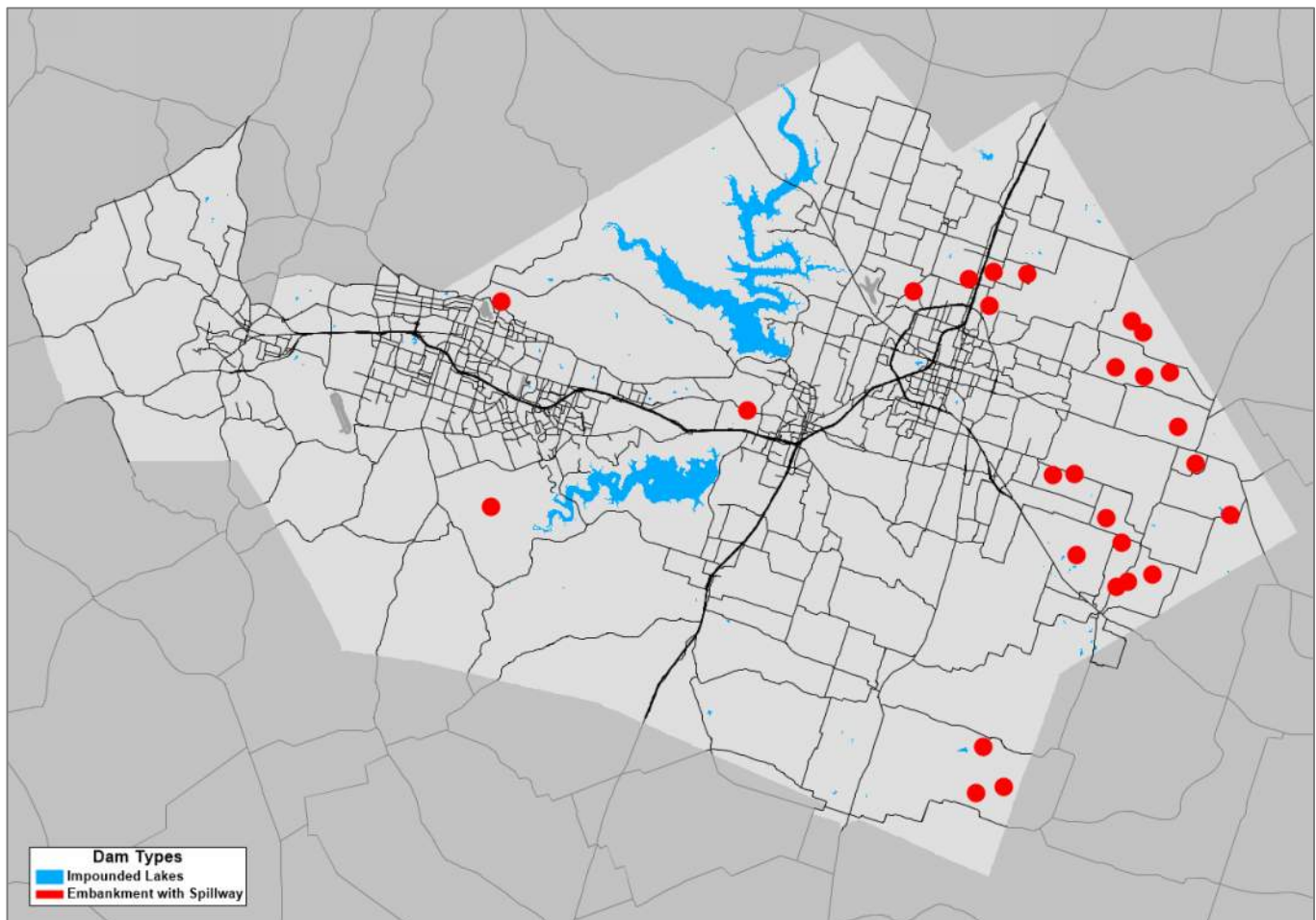
Earth embankment dams with berms and bypass spillways

are shown in **Figure 7**. The berms for this type of dam are straight across the face of the dam, with no shaping to contain the waters. **Figure 8** shows the distribution of the twenty-seven dams of this type in the region.

Figure 7: Earth Embankment Dam with Berm and Bypass Spillway



Figure 8: Distribution of Dams with Berms and Spillways





Simple earth embankment dams are shown in **Figure 9**. This is the simplest type of dam, with no berms, spillways, or other appurtenances. This distribution in **Figure 10** shows that there are fifty-three of this type of dam in the region.

Figure 9: Simple Earth Embankment Dam



Figure 10: Distribution of Simple Earth Embankment Dams

