

## 11. Public Infrastructure

### Introduction

The expected changes in development intensity and land-uses in the study area are anticipated to create additional demand for public infrastructure. In order to allow for more intense development in the area, it is necessary to provide sufficient infrastructure as per the increased demand. This section addresses the current usage, the additional supply required in the future and polices to develop sufficient infrastructure for future residents and businesses.

### Water System

#### Water Demand and Distribution System

Hydraulic analysis was performed to evaluate if the existing water distribution system could provide adequate service within Northwest Mesa areas with the increased demands in the West Main area and proposed Wave Yard project.

It can be seen from Appendix G (Infrastructure Improvements) that the existing distribution system can provide sufficient water and pressure demands within the West Mesa Area showing green color coded junctions; but that increased demands in this area would cause water demand and pressure problems downstream, most notably

on University Drive. Figure 11.1 shows the existing Water Distribution System in the area. The existing water main lines are primarily along the grid traversed by major roadways in the area.

### Policies

**PIP1:** Long-term strategies should be developed to provide for improvements to the water system in order to cater to the increased demand due to high-density development.

**PIP2:** Water system improvements necessary to serve the residents/businesses of new development/redevelopment should be developed before or concurrent with the new development/redevelopment.

### Projects

In order to provide sufficient water supply and pressure to the affected areas, the following improvements are required (Refer to Figure 11.2):

**PIPRJ1:** Replace existing 8" line with 12" line along Eldorado from Broadway to Birchwood.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ2:** Replace existing 8" line with 12" line along Birchwood from Eldorado to Roosevelt.

Primary Responsibility: Utility Department

Priority: Medium

**PIPRJ3:** Replace existing 8" line with 12" line along Roosevelt from Birchwood to Main.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ4:** Replace existing 6" line with 8" line along Phyllis from Main St to Dora.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ5:** Replace existing 6" line with 8" line along Dora from Phyllis to N. May.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ6:** Replace existing 6" line with 8" line along San Jose from Dora to 3rd St.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ7:** Replace existing 4" line with 8" line along 3rd St from San Jose to Dobson.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ8:** Replace existing 8" line with 12" line along University Dr from Tempe Canal to Dobson.

Primary Responsibility: Utility Department

Priority: Medium

**PIPRJ9:** Replace existing 8" line with 12" line along University from Ironwood to Longmore.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ10:** Replace existing 6" line with 12" line along University from Longmore to Alma School Road.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ11:** Replace existing 8" line with 12" line along Longmore from 5th St to 8th St.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ12:** Replace existing 8" line with 12" line along 8th St from Longmore to Canal.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ13:** Install new 12" line across the Tempe Canal from 8th St to Riverview.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ14:** Install new 12" line connecting at Bass Pro Dr as shown on the map.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ15:** Install new 12" line along 8th St from Dobson to Santa Barbara.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ16:** Install new 8" line along Evergreen from 8th St and connect to the south to finish loop.

Primary Responsibility: Utility Department  
Priority: Medium

**PIPRJ17:** Update the 2004 Water Master Plan to incorporate the improvements required in the area.

Primary Responsibility: Utility Department  
Priority: High

Hydraulic analysis was also performed for an intermediate scenario to assess improvements required to provide for the projected population and employment (Refer to Figure 11.3). The intermediate scenario assumes that TOD Station Area at Main/Sycamore would be developed to its maximum possible intensity, as envisioned in this plan, and 10% of the development envisioned along TOD Corridor Area would be complete.

Figure 11.1: Existing Water Infrastructure

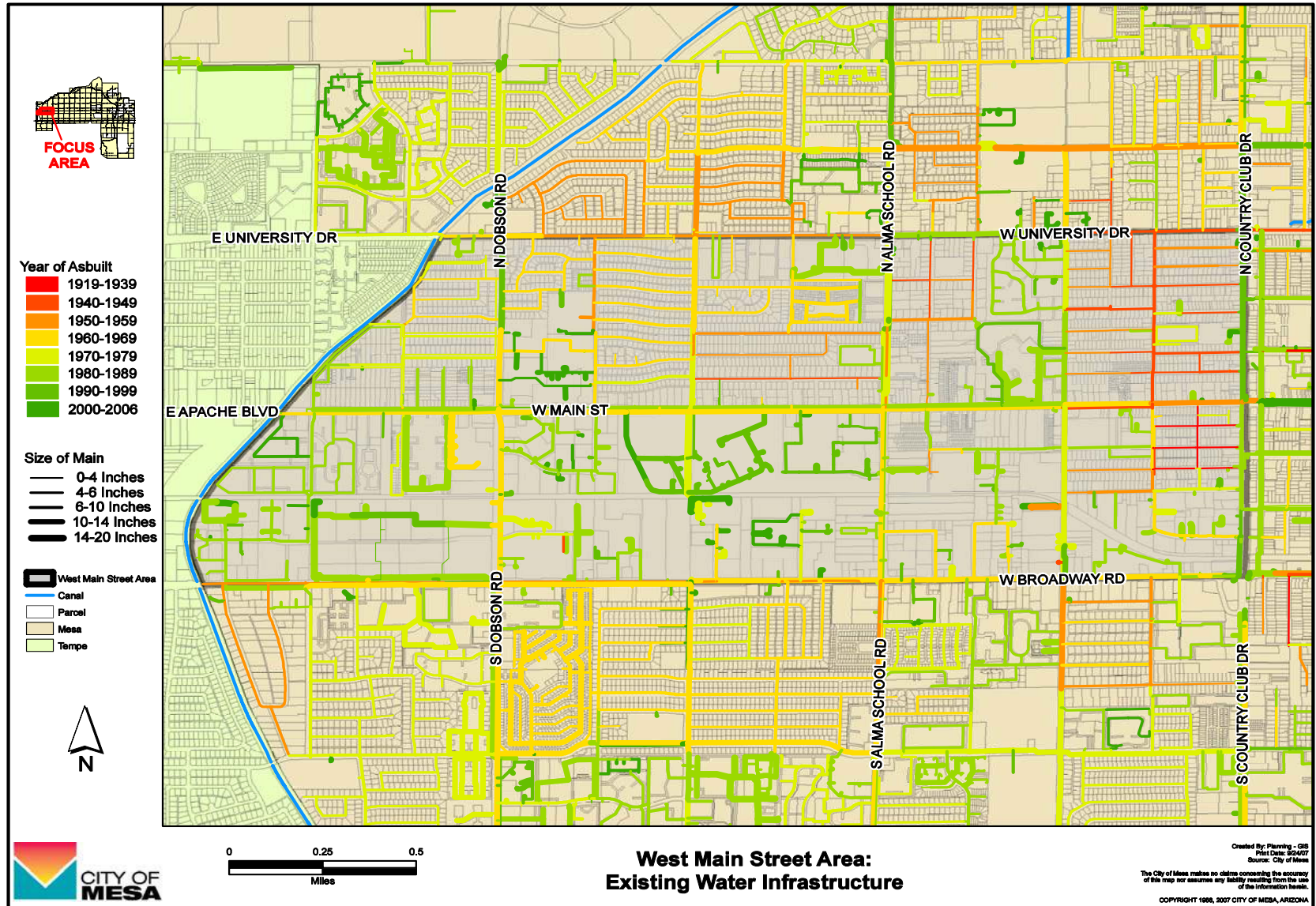
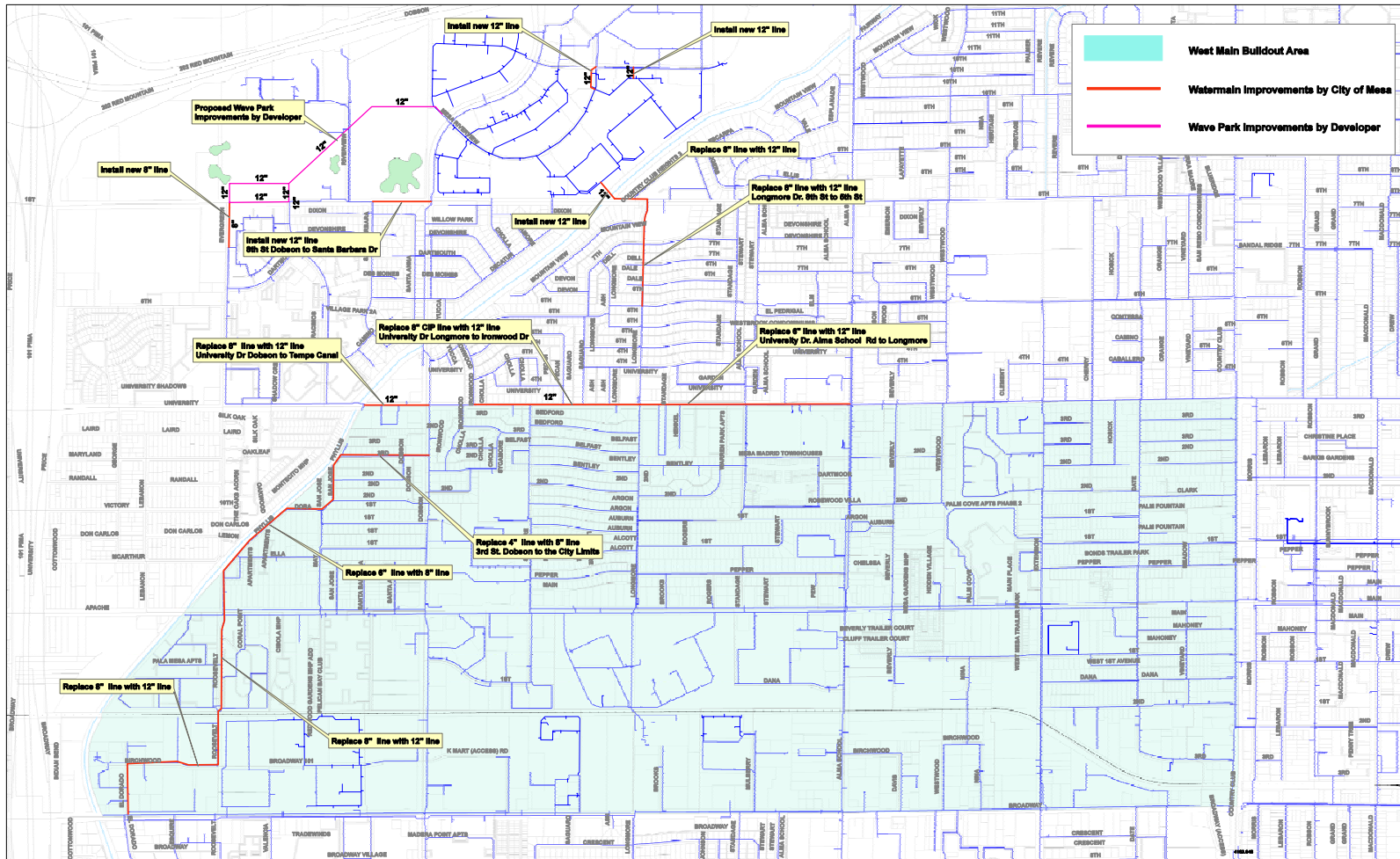


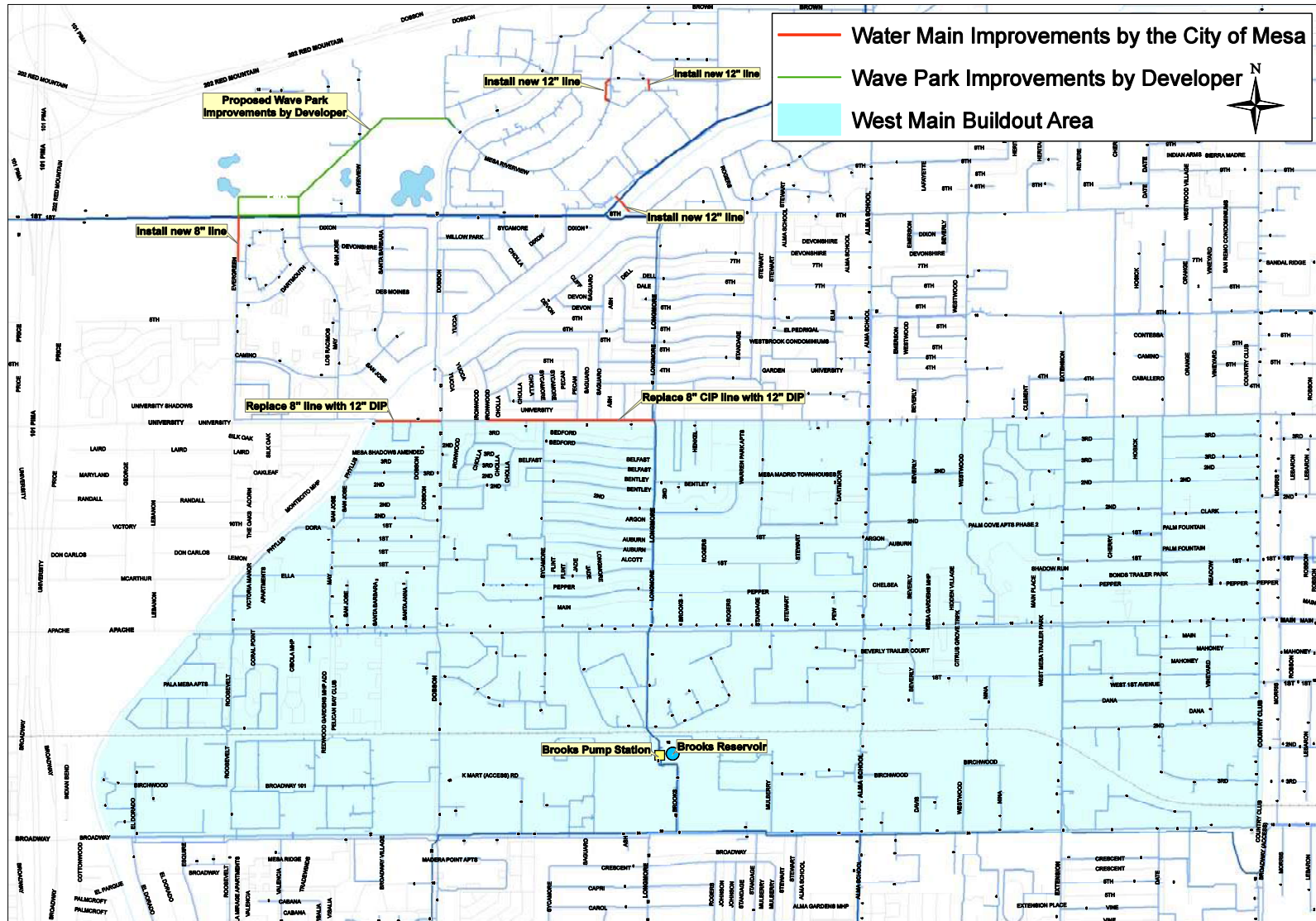
Figure 11.2: Water Infrastructure Improvement Plan- Maximum Possible Scenario



## WEST MAIN AREA IMPROVEMENT PLAN



Figure 11.3: Water Infrastructure Improvement Plan- Intermediate Scenario



## Wastewater System

### Wastewater Demand and Distribution System

Wastewater treatment is provided at the Northwest Water Reclamation Plant (NWWRP), located on Riverview Drive at the loop-202 freeway. This facility has a design capacity of 18.0 million gallons per day (MGD) and currently receives an average daily flow of approximately 12.0 MGD. Therefore, the NWWRP would have adequate capacity to treat the projected additional flow from the West Main Street Area up to the anticipated development intensity for the area.

The Central Mesa Interceptor (CMI) is the major sewer line serving the West Main Street Area. The section that serves the Planning Area consists of a 42" and 48" pipeline located along Broadway and Dobson Road (Figure 11.4). Based on anticipated population and employment intensity in the area, it appears that improvements would be required along sections of University Drive, Main Street, Extension road and line along Union Pacific Rail Road as shown on figure 115. For an immediate scenario, improvements are required along a small section of line along Main Street and Union Pacific Rail Road (Figure 11.6). Improvements would also be required along Dobson Road as shown in Figure 11.6.

### Policies

**PIP3:** Long-term strategies should be developed for safe sewer conveyance and disposal.

### Projects

**PIPRJ18:** Update Sewer System Master Plan to incorporate the improvements required within the area.

Primary Responsibility: Utility Department  
Priority: High

## Stormwater System

### Stormwater Distribution System

Figure 11.7 shows the existing stormwater Infrastructure in the area. The stormwater main lines are along Broadway Road, Alma School Road and Dobson Road.

### Policies

**PIP4:** Long-term strategies should be developed for wastewater conveyance, disposal, and the reuse of treated effluent from City reclamation.

### Projects

**PIPRJ19:** Assess improvements necessary for the storm water system that would be able to handle additional demand.

Figure 11.4: Existing Wastewater Infrastructure

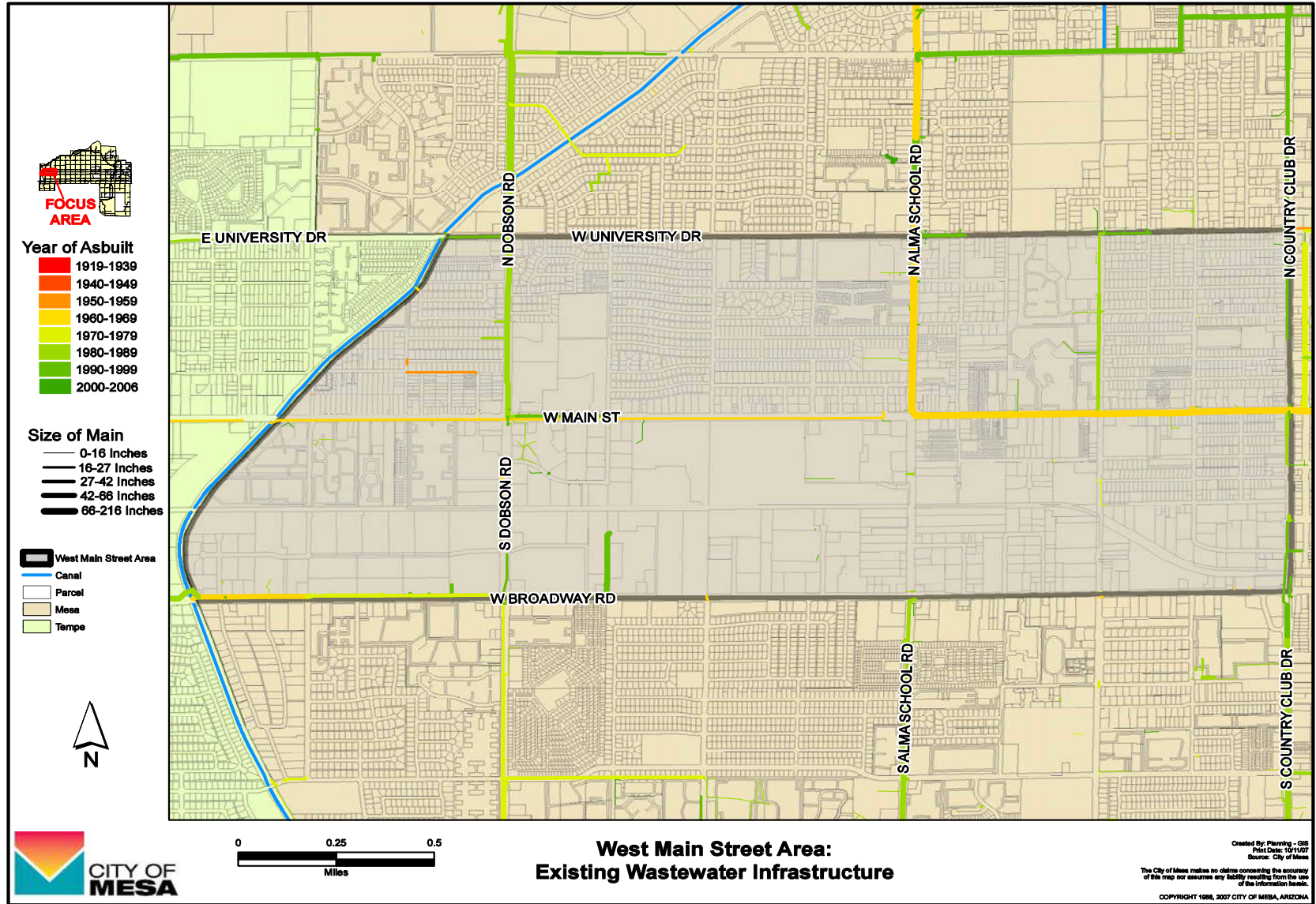




Figure 11.5: Wastewater Improvement Plan: Maximum Possible Scenario



Figure 11.6: Wastewater Improvement Plan: Intermediate Scenario

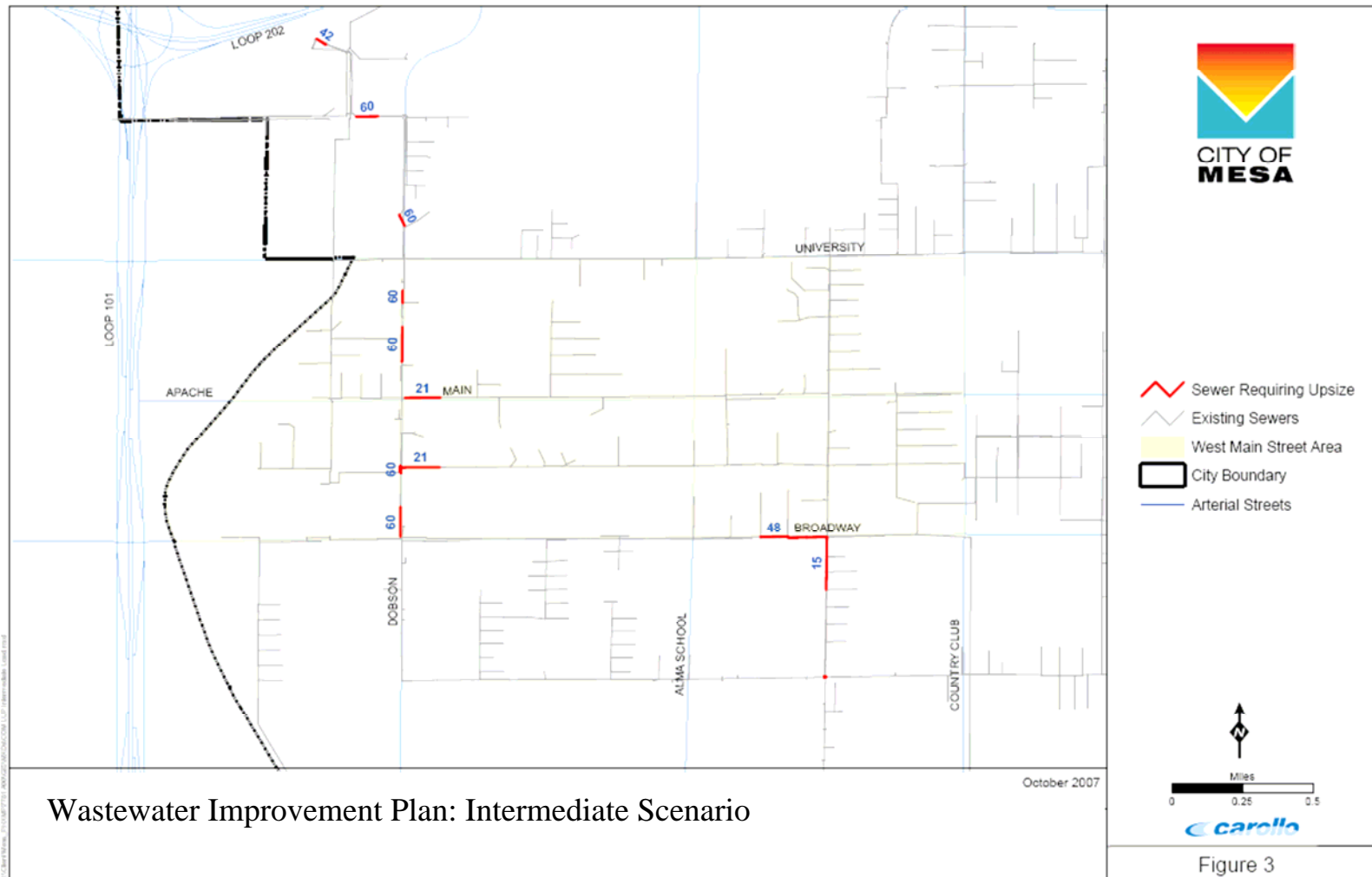
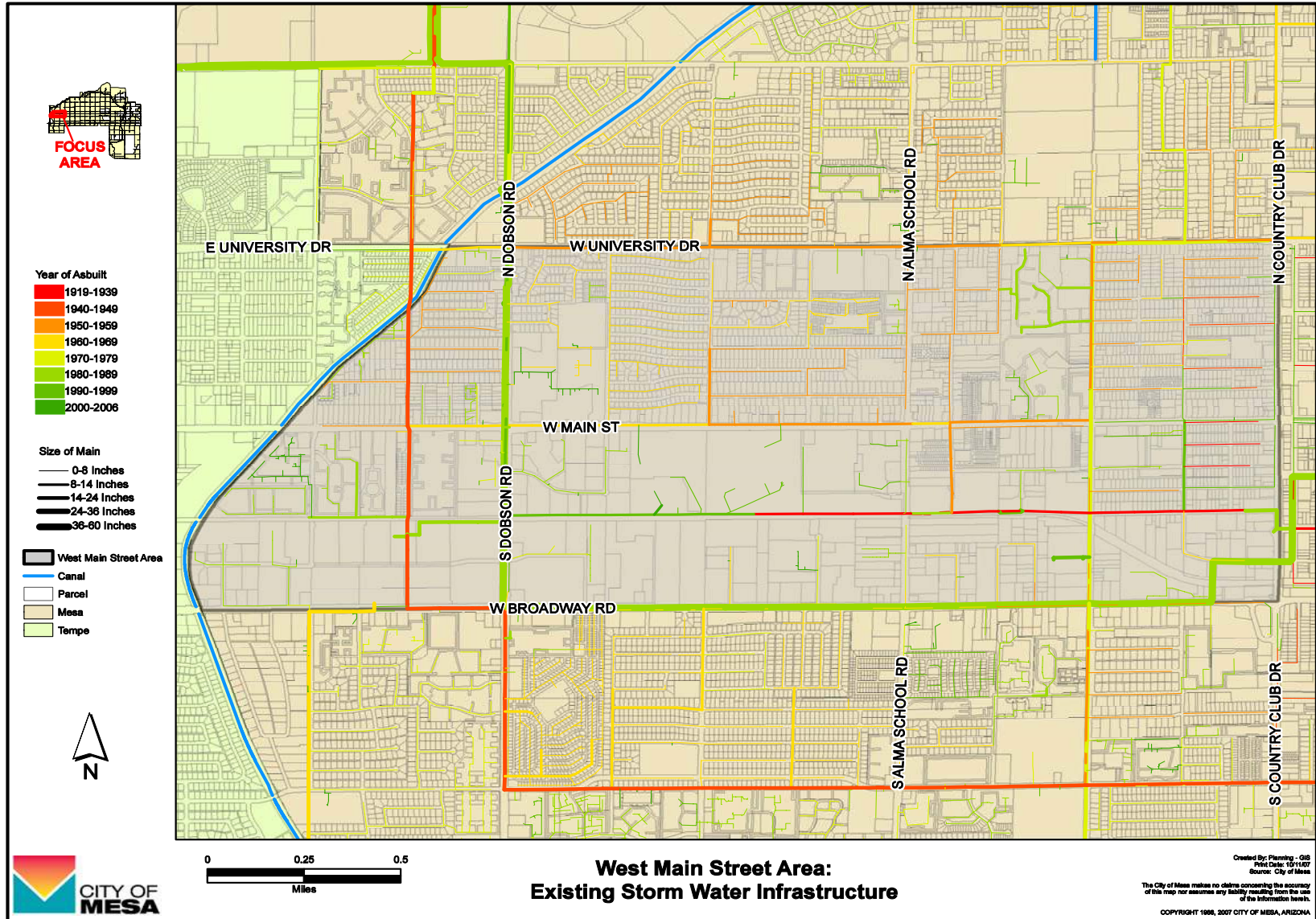


Figure 11.7: Existing Storm Water Infrastructure



## Electric System

### Existing Electric System

The following projects are undergoing or planned to meet the electric requirements in the area:

The installation of the new 69/12 kV substation tentatively is being planned at Kellwood Substation site. This upgrade would increase the capacity and would provide for the increased demand in the area.

The Broadway Road Widening Project between Dobson Road and Country Club Drive has significant effect upon the electric system, both transmission (69kV) and distribution (12kV) between Westwood and Country Club Dr. Overhead lines, poles and equipment are planned to be relocated to accommodate the wider roadway.

### Projects

**PIPRJ20:** Install duct banks to tie together the underground facilities between the west side of Extension, north of Broadway, and the north side of Broadway east of Extension. This will provide for flexibility in electric load switching.

Primary Responsibility: Utility Department  
Priority: Low

**PIPRJ21:** Convert crossing and parallel electric along the north side of Broadway Road and south side of University Drive to underground primary and secondary facilities. Such a conversion would require the installation of a new duct bank and pad mounted equipment facilities to efficiently replace the existing overhead facilities.

Primary Responsibility: Utility Department  
Priority: Low

**PIPRJ22:** Provide additional duct banks installed from Extension Rd. and 2nd Ave. north along Extension to 1st Street, and then east to Date and 1st Street. This would also provide additional linkage in the electric underground system and allow for more flexible load switching.

Primary Responsibility: Utility Department  
Priority: Low

In general, underground duct bank systems would include a minimum of 4 to a maximum of 9 5-inch diameter conduits encased in concrete along with vaults and aboveground equipment cabinets.

**PIPRJ23:** Support for the LRT extension throughout the impacted area. The full impact of the LRT is not fully known at this time. At a minimum it is anticipated that underground conversion of existing overhead circuits along Extension Rd. crossing Main Street would be required in case LRT is extended further east.

Primary Responsibility: Utility Department  
Priority: Low

## Gas System

### Existing Gas System

West Main Street Area is serviced throughout by natural gas lines as shown on figure 11.8. Current infrastructure is able to sufficiently provide for the natural gas demand in the area. In the recent years, major employers in the area have moved out, which has left the existing infrastructure highly under-utilized. It is envisioned that high-density development expected in the area would be sufficiently serviced by the existing gas infrastructure in the years to come.

### Projects

**PIPRJ24:** Examine existing gas infrastructure in the West Main Street Area to identify the improvements required to provide for increased population and employment as shown in Appendix H.

Primary Responsibility: Utility Department  
Priority: Low

### Program

**Plan Review:** Review of all development proposals, beginning with pre-submittal stage, in the West Main Street Area should include evaluation and recommendation based on the policies and projects identified in this section.

Figure 11.8: Existing Gas Infrastructure

