6 UTILITY INFRASTRUCTURE

Underground and overhead utilities exist throughout the Plan Area. These include natural gas, telecommunications, electric, stormwater, water and wastewater facilities. This chapter provides an overview of key infrastructure systems, identifies known deficiencies and discusses upgrades that may be required to support redevelopment called for in this Plan. This section was written in coordination with relevant utility plans, including those of Anchorage Water and Wastewater Utility and the Municipality of Anchorage.

A. Overarching Infrastructure Policies

Development in the Plan Area depends on access to appropriate utility infrastructure, and it is critical that adequate facilities are available to support neighborhood redevelopment and transit improvements. Any new development should help to enhance the utility infrastructure and not create new capacity issues.

Policy 6.1: Infrastructure projects should be coordinated with public improvement efforts.

Utility infrastructure projects should be coordinated with other public improvement efforts identified in the Plan, and should target priority redevelopment opportunities.

Policy 6.2: Utility systems should strive for sustainability.

Improvements to utility systems should strive for sustainability and resilience in design, as these methods tend to have reduced operating and long-term maintenance costs. These "green infrastructure" opportunities should be given priority.

B. Water Utilities Policies

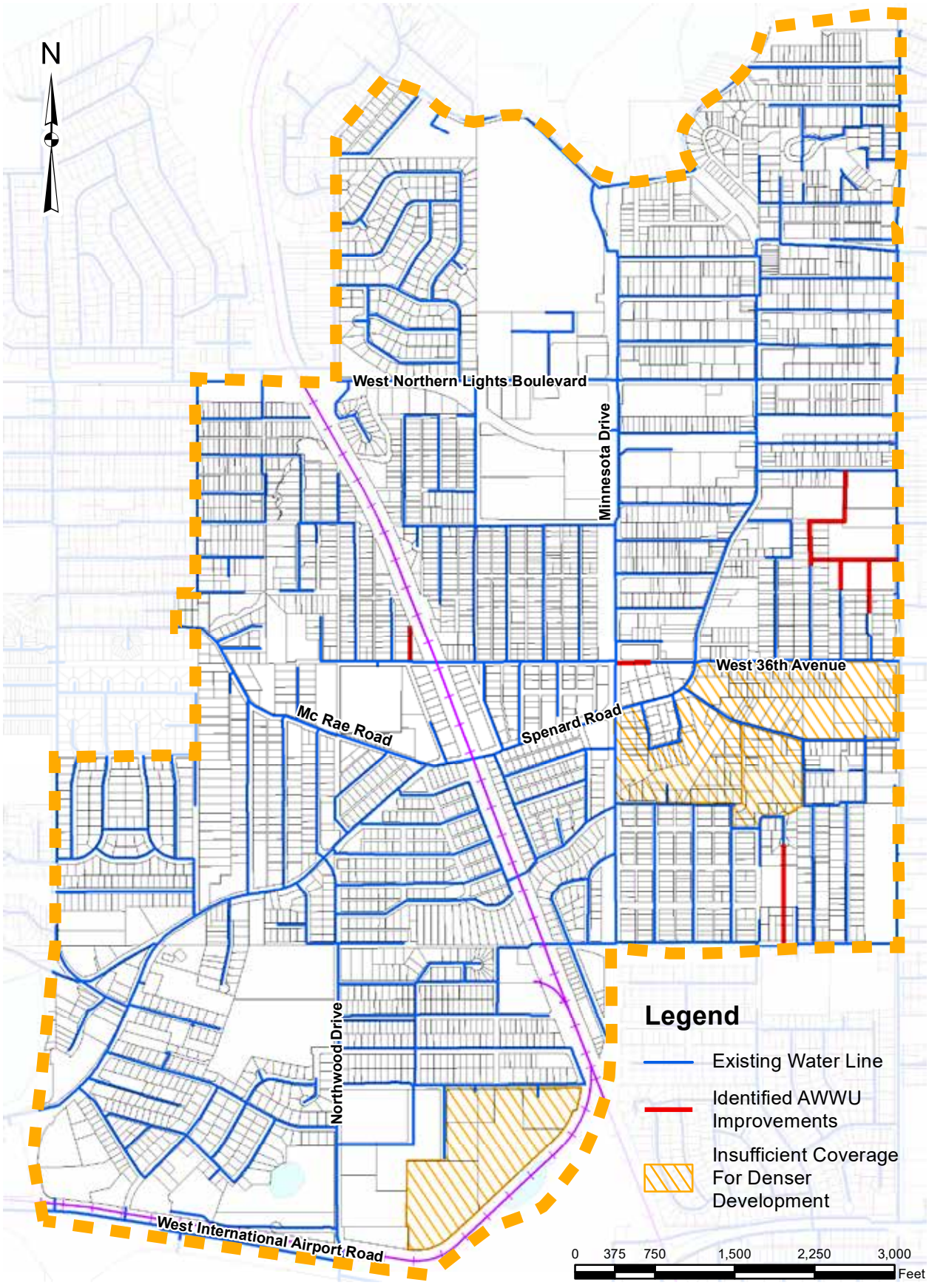
Anchorage Water and Wastewater Utility (AWWU) provides drinking water facilities for the Plan Area. These include underground water mains, services and fire hydrants. AWWU publishes a Water Master Plan every five to ten years. The 2012 AWWU Water Master Plan identified existing conditions of the system, analyzed system deficiencies, recommended system improvements and provided a schedule for project implementation. AWWU's existing system and planned improvements are shown on Figure 6.1.

Policy 6.3: Existing AWWU systems should be expanded to provide water service.

Some of the parcels in the Plan Area utilize wells and are not connected to the AWWU system. The size of these wells can limit redevelopment where higher intensity development is envisioned. As a result, the existing AWWU system should be expanded to provide water service to these areas and promote redevelopment. Further study should be completed to identify needed upgrades in the drinking water system.

Policy 6.4: Improvements to the drinking water system should follow AWWU's Design Criteria Manual

Any improvements to the drinking water system should follow AWWU's Design Criteria Manual for sizing, type, and depth of pipe. Environmental regulations require a ten foot separation between drinking water service and transmission lines and wastewater (including storm drain) lines. Additionally, to minimize costs associated with replacing water lines, AWWU recommends a minimum of a 10-foot separation between all utility lines and structures and their facilities. To promote consistency, the AWWU recommends that all new water facilities located in the public right-of-way be installed north and east of the right-of-way centerlines.


N
West Northern Lights Boulevard
Minnesota Drive
West 36th Avenue
Mc Rae Road
Spenard Road
Northwood Drive
West International Airport Road
Legend
Existing Water Line
Identified AWWU Improvements
Insufficient Coverage For Denser Development
0 375 750 1,500 2,250 3,000
Feet

C. Wastewater Policies

AWWU also provides wastewater facilities in the Plan Area. These include underground sewer mains, manholes, services, and lift stations. AWWU publishes a Wastewater Master Plan every five to ten years, and the 2014 AWWU Wastewater Master Plan identified existing conditions of the system, analyzed system deficiencies, recommended system improvements and provided a schedule for project implementation. AWWU's existing wastewater system and planned improvements are shown on Figure 6.2. Some of the parcels in the Plan Area are not connected to the AWWU system and have underground septic facilities. These septic systems are limited to smaller residential development, but could restrict denser development at some locations. The on-site system will need to be expanded to provide wastewater service to these areas to support redevelopment efforts. This could also be addressed during the extension of the wastewater mains, but may also require the addition of an on-site lift station.

Policy 6.5: Identify needed upgrades in the wastewater system.

Further study should be completed to identify needed upgrades in the wastewater system that will promote development in the Plan Area. Providing gravity wastewater service to sites that are planned for redevelopment is preferred. As streets in the Plan Area are reconstructed, the existing wastewater system should be examined to determine if it is limiting development and may warrant expansion or upgrade.

Policy 6.6 Wastewater system improvements should follow the AWWU Design Criteria Manual

Any improvements to the wastewater system should follow AWWU's Design Criteria Manual for sizing, type, and depth of pipe. To minimize costs associated with replacing wastewater lines, AWWU recommends a minimum of 10-foot separation between all utility lines and structures and their facilities. To promote consistency as new development occurs, AWWU recommends that new wastewater facilities be installed south and west of right-of-way centerlines.


N
West Northern Lights Boulevard
Minnesota Drive
West 36th Avenue
Mc Rae Road
Spenard Road
Northwood Drive
West International Airport Road
Legend
Existing Sewer Line
Identified AWWU Improvements
Insufficient Coverage For Denser Development
0 375 750 1,500 2,250 3,000
Feet

D. Stormwater Policies

The Municipality of Anchorage owns and maintains storm drain systems in the public right-of-way. The Plan Area is located within the Fish Creek watershed with the majority of the storm drain systems and surface runoff outfalling to one of the branches of this creek. The existing storm drain system, streams, and flood zones are shown on Figure 6.3. Areas known to be prone to flooding are noted on this map.

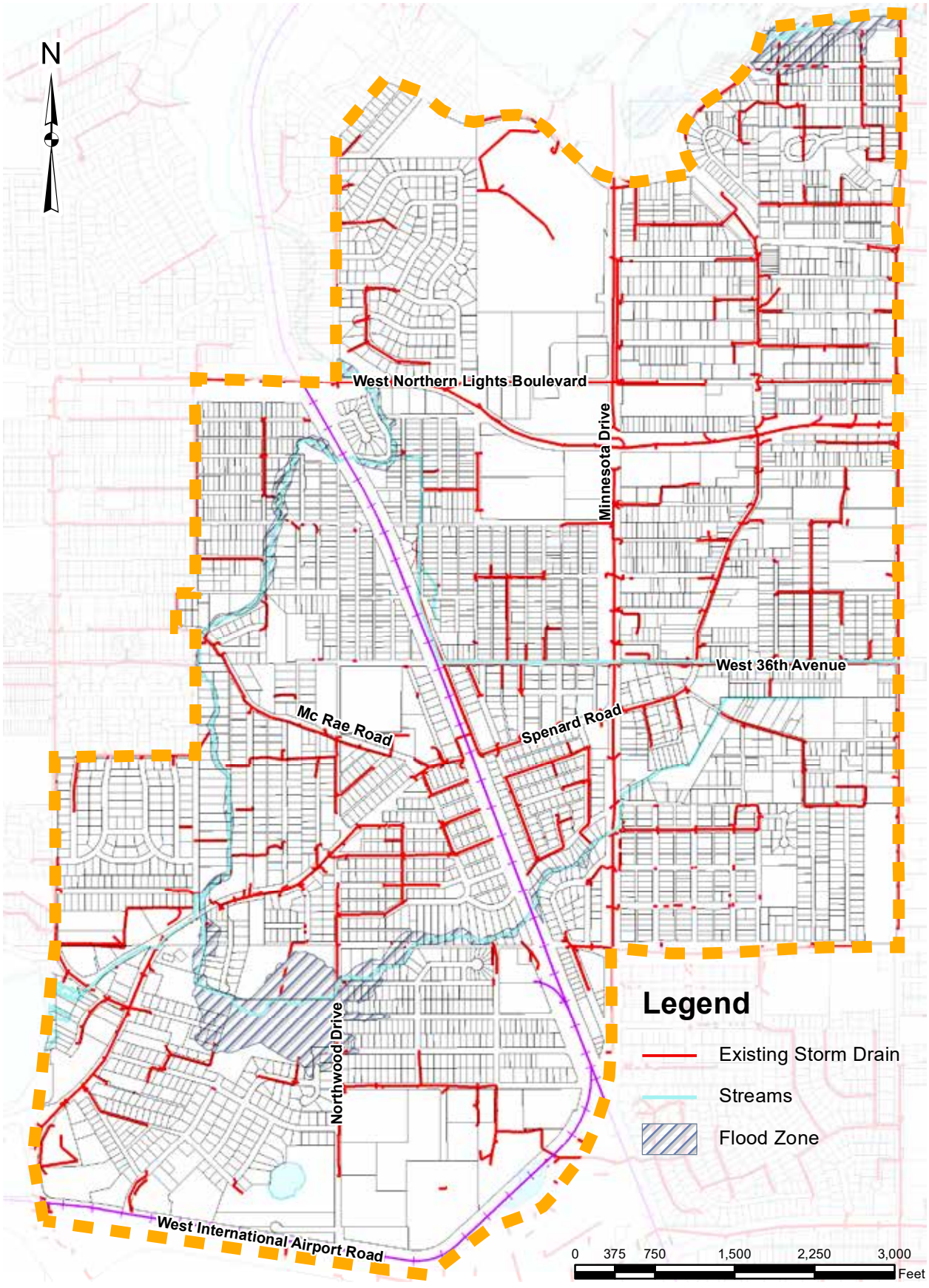
Municipal drainage requirements currently allow only a post-construction increase of 5.0% to storm water runoff. As a result, on-site retention of stormwater is required for the remaining runoff.

The Municipality requires the use of low impact development (LID) and green infrastructure during site development to naturally infiltrate and treat stormwater. These systems include bio-filtration swales, retention ponds, drywells, and rain gardens. These structures add amenities to sites while also helping to manage storm water runoff.

While green infrastructure tends to have lower operating and maintenance costs, they take a larger amount of land to install, versus traditional infiltration galleries. Using them may limit property development on constrained sites. All stormwater is required to be treated prior to discharge to satisfy EPA requirements. Retention and treatment is only required for smaller (10 year) storm events, and a bypass must be installed to ensure a larger storm event (100 year) does not harm public or private property. This typically involves construction of a storm drain bypass to the Municipality system. Storm drains do not currently service much of the Plan Area. As a result, extension of the system can be cost prohibitive and limit redevelopment.

Policy 6.7: Consider storm drain installation.

As streets in the Plan Area are reconstructed, storm drain installation should be considered.


N
West Northern Lights Boulevard
Minnesota Drive
West 36th Avenue
Mc Rae Road
Spenard Road
Northwood Drive
West International Airport Road
Legend
Existing Storm Drain
Streams
Flood Zone
0 375 750 1,500 2,250 3,000
Feet

E. Snow Management Policies

Snow removal responsibilities within the Municipality of Anchorage are shared between the Municipality of Anchorage Street Maintenance Division, Alaska State Department of Transportation & Public Facilities, and the Municipal Parks and Recreation department. MOA Street Maintenance uses a priority system where major arterials are cleared first, neighborhood collectors second, and residential streets last. Pedestrian routes follow the same priority as the adjacent roads and are cleared concurrently. Where bike lanes exist, snow is initially stored in those adjacent to travel lanes and then the bike lanes are cleared as time permits. With the exception of the Downtown Business District, Street Maintenance does not plow on-street parking areas.

Public snow storage sites have decreased in the past twenty years in Anchorage increasing snow hauling costs and increasing the need for on-site snow storage in the public right-of-way. The snow disposal site for the Spenard area was recently closed, and snow from the Spenard area is now hauled to South Anchorage, resulting in substantially increased hauling times. The Municipality requires private businesses and residences to store snow on-site or have a hauling plan in place. At no time is snow from a private development allowed to be stored within the public rights-of-way.

The Alaska Department of Transportation performs snow removal on Fireweed Drive, Minnesota Drive, Benson Boulevard, and Northern Lights Boulevard. The Alaska Department of Transportation utilizes high speed plows that start at the center of the road and work within the right-of-way. Typical snow removal for major roads such as Minnesota Drive is 24 hours.

Policy 6.8: Promote on-site snow storage throughout the plan area.

This includes snow storage for the public ROW and private properties as indicated in requirements described above. Wherever possible, on-site storage should be provided to allow for a sustainable long-term solution that not only reduces maintenance costs, but also lessens environmental impacts. A seven foot snow storage area free of public and private improvements is preferred by Street Maintenance in public right-of-way to minimize the need for hauling.

Policy 6.9: Promote snow storage along streets and internal drives, using best management practices.

New development on private property should include defined driveways, space for snow storage, and minimize obstructions such as raised medians that constrain snow movement operations.

Policy 6.10: Consider establishing a snow management district.

The National Snow and Ice Management Association provides a summary of best practices that could serve as a reference in establishing district policies.