Environmental Resources

There are many elements of the physical environment which may impact on the direction and type of future growth of a community. Evaluation of the physical environment allows for the identification of potential environmental constraints to development and the determination of environmental features which may be negatively impacted by urban development. Natural resources can also be important community assets; preservation and effective management of such resources can play an important role in establishing community character and attracting new investment to the city.

This chapter of the Comprehensive Plan provides an overview of Pleasant Hope's environmental resources and sets forth goals, objectives and actions to address environmental issues and to enhance the city's vision as an environmental friendly community.

Topography

Pleasant Hope lies on the Springfield Plateau which is characterized by gently rolling hills and valleys. The city itself is primarily located in a lowland area with access to the community from the north and south along Highway H providing gateway views of the city. Most slopes within the city do not exceed five percent and slope is generally not a significant constraint to development.

Hydrology

Pleasant Hope is located within the Pomme de Terre River watershed. The Pomme de Terre River enters in the southeast corner of Polk County and traverses across the eastern part of the county towards the northwest, where it forms the headwaters of Pomme de Terre Lake. Two tributaries to the Pomme de Terre River run through Pleasant Hope. Mill Creek traverses south to north through the city and Dry Creek flows in a southwest to northeast direction.

Of the various environmental hazards or natural events which could impact Pleasant Hope, the city is most at risk to flash flooding. Areas of the city along these drainage ways experience substantial flash flooding, especially when rainfall rates exceed one-half inch per hour. The lack of proper storm water catchments and conveyance contributes to overflow and pooling along Mill Creek and Dry Creek, as well as Rush Street, Adam Street, and Fullerton Street.

Figure 3-1 shows the drainage patterns and floodplains within Pleasant Hope. In response to the impacts of flash flood events within the past decade, Pleasant Hope joined the National Flood Insurance Program in January, 2008. Planning for effective storm water management is important for protecting both public and private investment in the city.

Environmental Assets

There are some environmental assets within the immediate Pleasant Hope area. Nearby access to the Pomme de Terre River, Lake Pomme de Terre and conservation areas provide opportunities to draw recreational tourists into the community, if not as a destination, then as a possible staging point with support services. Pleasant Hope prides itself on its small town character with a friendly environment. Pleasant Hope has the opportunity to set itself apart from other smaller communities in the Springfield metropolitan region by creating a community sense of place and identity based on a foundation of environmental preservation.

Goals, Objectives and Actions

Goal 1
Protect and enhance Pleasant Hope's environmental resources.

Objective 1
Ensure that development is not located in or near environmentally sensitive areas.

Actions

1.1 Incorporate environmental considerations into decision-making processes. The city's subdivision regulations should be updated as necessary to incorporate best practices and zoning regulations to be developed should incorporate incentives that promote environmental resource protection in new development.

1.2 Prohibit the filling in or other disturbance of natural drainage channels.

1.3 Develop a greenway buffer corridor along Mill Creek and Dry Creek.

1.4 Preserve floodplains as greenway biodiversity conservation corridors for permanent open space, parks, and recreation.

Objective 2
Maintain the quality of the groundwater supply.

Actions

2.1 With new development or redevelopement reduce impervious surfaces to promote the recharge of local aquifers.

2.2 Minimize erosion, excessive storm water runoff, and pollution by requiring the use of *best management practices* for all construction activities.

2.3 Utilize *Low impact development practices* as they relate to storm water treatment.

Goal 2
Demonstrate positive environmental management.

Objective 1
Incorporate environmental resource management into decision-making on public infrastructure improvements and land development.

Actions

1.1 Encourage the preservation of landscape resources during development or redevelopment projects.

1.2 Encourage Utilization of native plants and landscape materials where possible.

1.3 Promote innovative development design, such as green building construction, to protect natural resources.

1.4 In the event contaminates are identified, promote the clean-up and redevelopment of potentially environmentally contaminated areas.

1.5 Make investments in, and usage of, clean energy sources a priority whenever possible.

Goal 3

Promote the responsible use of environmental resources and energy.

Objective 1

Encourage and support programs that focus on pollution reduction and prevention and sustainability of environmental resources.

Actions

1.1 Encourage the use of environmentally friendly materials and processes, known as green construction, in new building construction and modifications of existing buildings.

1.2 Promote water and energy conservation through public outreach to residents by utilizing awareness program that explain conservation principles and techniques.

1.3 Promote a walkable community by encouraging mixed use and compact development patterns that reduce walking distances. Zoning regulations should include provisions for mixed land uses and possible incentives for more compact development patterns that preserve open space.

1.4 Encourage the reduction of materials entering the waste stream through recycling and reuse.

Storm Water Management

Storm water runoff from buildings, streets, and sloped areas affect Pleasant Hope's commercial and residential districts during rain events. Based upon the topography and geographic location of the city in relation to the Pomme de Terre River, options that may be appropriate for effectively managing storm water runoff include direct discharge, low impact storm water management, storm water detention, and water quality enhancement systems such as rain gardens.

Open ditch storm water conveyance has proven to be inadequate to direct the flow generated within Pleasant Hope. Dispersion methods using natural filtering systems, such as stream buffers and vegetation filter strips, would help to collect, convey and cleanse the runoff from developed portions of the city.

Innovative low-impact management practices should be implemented to help protect water quality and manage storm water runoff. Recharging the aquifers and treating storm water as a resource rather than a negative product of development should be a priority for management of Pleasant Hope's environmental resources.

Low Impact Development is a technique that looks at storm water management as a natural process. Natural drainage systems are used to direct flow, retain overflow, and pass storm water through bio-retention systems to cleanse the water that will eventually replenish the local aquifers. There are several systems that range in size and cost, but all deal with storm water runoff in an environmentally sensitive, non-artificial manner.

Rain gardens filter storm water and help replenish the groundwater

Landscape Enhancement and Preservation

Improvement in a city's landscape is a great method of improving the aesthetics of a place through environmental means. The implementation of a city-led landscaping program can have many advantages for Pleasant Hope. In addition to aesthetic improvements, a comprehensive landscaping plan would contribute to the community's sense of pride and a sense of place that will be enticing to visitors and new investors. Landscape protection policies that promote the protection of existing trees and greenery should be incorporated into the city's land development regulations.

Multi-Use Greenway Corridors

Pleasant Hope's main drainage ways are ideal locations for multi-use corridors that would provide for open-space, storm water management, and trail ways throughout the city. The city has developed the Pleasant Trails Master Plan and constructed the Phase 1 trail running between the Pleasant Hope Schools and the new farmer's market site on the west side of Main Street. A trail has also been constructed in the city park on the east side of Main Street. The city should continue to work with local property owners to gain easements that would provide the public with a connected system of trails along Mill Creek and Dry Creek. This would also provide natural filtration systems for storm water runoff into the tributaries and would likely increase the value of adjacent properties.