23. Appendix M: Pioneer Park Fire Management Plan

23.1. Introduction
Pioneer Park is susceptible to forest fires of natural and human origin. The risk can be partially managed by planning for an occurrence and intervening to mitigate risk factors before such an occurrence. This plan does both within the constraint of preserving the native forest in Pioneer Park and using the resources currently available to the City of Mercer Island. The goal of this plan is to guide City departments to better protect Pioneer Park and the surrounding neighborhood from fire. It begins by assessing current resources and proposes certain goals for fire management. Then it describes actions for mitigation of risk factors and improving response to fire occurrences.

23.2. Resource Assessment

Forest Fire Occurrence

Fire Department Resources
The Mercer Island Fire Department (MI Fire) would be the first response to fire occurrence. MI Fire has seven fire fighters stationed on the island at any one time. Three are located at Station 92, across the street from Pioneer Park. However, either station might respond to the fire based on the battalion’s availability. The incident commander would make the decisions about fighting a fire based on the situation. Washington State Department of Labor and Industries allows fire fighters in structural protective clothing to work a maximum of one hour on a wildfire. First response by on-duty staff could be followed by calling out for mutual aid from adjacent jurisdictions to insure coverage of the incident. If required, off-duty staff could be called to report for duty as the incident commander deems necessary.

Mutual aid agreements with other jurisdictions allow MI Fire to request fire units from other fire departments. Bellevue and Eastside Fire and Rescue have resources that would be useful for forest fire fighting. For example, Eastside Fire and Rescue has personnel trained in fighting wildland fires. These resources might be needed depending on the extent of a fire.

Washington State Department of Natural Resources (DNR) has capability to fight wildland fires. They may be called in, if necessary, when local and mutual aid resources are exhausted. They offer many resources most fire departments do not have, such as inmate crews, wildland engines, and experienced overhead (aerial) support. Eastside Fire and Rescue currently houses and operates a CO-OP H5S engine owned by DNR. Response time is expected to be less than two hours. The main office is located in Enumclaw. The City would be responsible for the cost of any resources utilized. This includes logistical support, such as food, restrooms, lodging, etc.
Hydrants and Trail Access

Pioneer Park has fire hydrants along all of the perimeter roads (See figure 1).

Other boundaries also have hydrants available through private property. Only the very center of each quadrant and some parts of the ravine in the Northeast quadrant are more than 600 feet from an available hydrant (See Figure 1). The 600 foot buffer is based on MI Fire having 600 feet of hose available for hydrant hook up. Realistically, topography and trail access reduce the actual distance that water can be conveyed into the park by fire hose. A distance of 450 feet is the maximum extent that water can be reliably conveyed into the park. This leaves significant areas of the park without access to water in case of a fire.
23.3. Goals and Priorities

The goals of the Pioneer Park Forest Management Plan are directed toward maintaining a diverse native forest with dense vegetation buffering the edges of the park and abundant deadwood for wildlife habitat. The generally accepted principles of fire management along wildland interfaces run counter to these goals. Prescriptions for reducing risk to adjacent properties include removing trees to increase distances between trees, extensive pruning of trees and shrubs to reduce ladder fuels and clearing the ground layer of woody debris to reduce fuel loads.

These two goals can be partially reconciled to achieve dense vegetation along park edges while achieving some reduction of ladder fuels and fuel loads along residential portions of the park perimeter. Furthermore, the size, location and hydrant system surrounding the park, as well as the immediate availability of a highly trained, well equipped firefighting staff, make this situation distinct from typical wildland fire situations. Prescriptions for wildland fire scenarios assume lower levels of immediate response than we might expect on Mercer Island. Nevertheless, any response to fire in the park will be limited.

The priorities for MI Fire response in any situation are (in priority order) life, property, and incident stabilization. Protecting forest vegetation would fall into the third priority. Protecting lives and adjacent homes would be the overriding concern of the incident commander in a forest fire situation. A large fire in the park would burn sizable portions of the park before it could be brought under control.

23.4. Evaluation

Pioneer Park is susceptible to fire primarily from human behavior. Historical incident of encampment (with fire) and fireworks use in the park are particular concerns. The forest is particularly prone to drought because the soils are well drained. Woody debris and organic “duff” have built up in the park, increasing fuel loading. Houses back up to the park, with minimal distances between structures and stands of dense vegetation. The interior of the park is not accessible to fire vehicles because the trails are too narrow for them.

However, the size of the park and the cooler, moister climate of Western Washington reduce risk in comparison to Eastern Washington forest landscapes. The quadrants are surrounded by a network of fire hydrants that can supply water to the park perimeter and significant portions of the interior. Fire Station 92 is located across the street from the park. The staff of MI Fire is highly trained in incident response. Furthermore, mutual aid agreements with other cities and the availability of DNR crews would enable the City to sustain a response and provide specialized capabilities as conditions warrant.

Limitations in response include the difficulty of conveying water to the center portion of a quadrant. For certain hydrants, vegetation poses a barrier to ready trail access, while other hydrants have no trails that lead into the park. City firefighters have not received training specific to the situation in Pioneer Park. These limitations are certainly addressable (See Action Items, below)
### Safety factors

<table>
<thead>
<tr>
<th>Fire Occurrence</th>
<th>Risk factors</th>
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<tbody>
<tr>
<td>• Well-developed trail system</td>
<td>• Narrow trail widths</td>
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<tr>
<td>• Extensive fire hydrant network around park perimeter</td>
<td>• Some hydrant locations are not close to trail access points</td>
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<tr>
<td>• Nearby location of Fire Station 92</td>
<td>• Lack of water conveyance to the interior of the park</td>
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<tr>
<td>• Trained and coordinated firefighters</td>
<td>• Lack of firefighter training specific to Pioneer Park</td>
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<tr>
<td>• Mutual aid agreements with other cities</td>
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<tr>
<td>• Availability of DNR resources</td>
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<td>• Standard incident protocols are expected to work for possible fire scenarios</td>
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<table>
<thead>
<tr>
<th>Fire Mitigation</th>
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<tbody>
<tr>
<td>• Street buffers</td>
<td>• Seasonal low rainfall</td>
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<tr>
<td>• Low summer temperatures</td>
<td>• Droughty soils</td>
</tr>
<tr>
<td>• Winter rainfall</td>
<td>• Woody debris and “duff” (ground fuel load)</td>
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<tr>
<td>• Low summer wind speeds</td>
<td>• Encampment activity</td>
</tr>
<tr>
<td>• Small land area</td>
<td>• Fireworks use in the park</td>
</tr>
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<td></td>
<td>• Minimal backyard buffers</td>
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**Figure 2: Case-specific factors in Fire Occurrence and Fire Mitigation at Pioneer Park**

### 23.5. Vegetation Management Plan

Neighbor partnerships will be sought to “adopt” areas of the park for fire mitigation (and also habitat improvement, as described in the Pioneer Park Forest Management Plan). Participating neighbors, under the direction of City staff, would restore and maintain the portion of the park behind their houses within a certain distance of the residence depending on the terrain and the vegetation found there. City staff would recommend ways the forest edge should be managed to meet forest management and fire management goals. The neighbors and City staff would develop a work plan cooperatively. The following describe some examples of these activities. Neighbor partners would foster dense, low-growing evergreen shrubs in the understory and periodically thin tall shrubs and dead branches to inhibit a ground fire from climbing into the canopy. Neighbors also would work to eliminate firewood and debris piles along property boundaries. City staff would support these activities with debris pickup, tool lending and technical assistance. The City would also remove the wood from trees that they cut down in these areas, instead of leaving branches and logs to decompose.
23.6. Action Items

Fire Occurrence

1. MI Fire will offer training for Station 92 staff pertinent to the Pioneer Park situation. The DNR Western Washington Interagency Training Committee provides standard training on wild fire situations. If existing training is not adequate or pertinent to the Pioneer situation, MI Fire will propose specialized training and a budget for that.

2. MI Parks will give Pioneer Park trails access information to MI Fire in formats most useful to MI Fire staff.
3. MI Fire will familiarize staff with Pioneer Park and evaluate its existing equipment for anticipated incidents in the park.
4. MI Parks and MI Fire will develop a list of desirable basic fire fighting hand tools to be stored in fire caches at Station 91 and 92.
5. Both departments will further research the availability of DNR for fire response and determine what conditions may warrant their involvement.

**Forest Fire Mitigation**

1. MI Parks will approach park neighbors and work with them to reduce fire potential and improve habitat value along the residential perimeter of the park.
2. MI Parks will conduct an educational campaign about fire-wise landscaping with adjacent property owners using existing educational materials.
3. MI Parks will patrol remote locations of the park during summer months to discourage encampment activity.
4. MI Parks will conduct an educational campaign with citizens about fire risk in Pioneer Park.
5. MI Parks and MI Fire will develop a plan to improve trail access into the park for a narrow vehicle and create access points where the trail system does not connect well with existing hydrant locations.

**23.7. Costs**

This plan is intended to work within the existing resources as much as practical. Certain items proposed above may be purchased within existing budgets, while others may represent new costs. Budget planning is beyond the scope of this plan. Items that may represent new purchases include:

- Training for MI staff
- Public education materials and events
- Tool caches for Fire Stations 91 and 92