
Annual Maintenance Costs for Maintenance CFDs

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City of Roseville
SCHEDULE OF MAINTENANCE COSTS AND CHARGES
FOR COMMUNITY FACILITIES DISTRICTS

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City of Roseville

Park Maintenance, Landscape Corridors, Paseo and Median Maintenance

#	Activity Cost Description	Calculation Unit	Frequency	Effective July 1, 2025	Effective July 1, 2026
1	Landscape Corridors, Paseos, Medians	per acre	yearly	\$15,498.05	\$15,880.85
2	Neighborhood Park: Basic, 3 to 5 Acres	per acre	yearly	\$17,220.05	\$17,645.39
3	Neighborhood/School Park, up to 12 Acres	per acre	yearly	\$18,942.06	\$19,409.92
4	Open Space	per acre	yearly	[a]	[a]

[a] See "Preserve and Open Space Maintenance - Detailed" fee section to calculate Open Space costs.

City of Roseville

Preserve and Open Space Maintenance

#	Activity Cost Description	Calculation Unit	Frequency	Effective July 1, 2025	Effective July 1, 2026
Biological Inspections					
1	General Biological Inspection	per acre	yearly	\$58.21	\$59.65
Vernal Pool Grasslands:					
2	Wet Season Vernal Pool Hydrology and Invertebrate Survey	per vernal pool	yearly	\$215.64	\$220.96
3	Dry Season Vernal Pool Hydrology and Floristics	per vernal pool	yearly	\$215.64	\$220.96
4	Upland Grassland Monitoring	per 25 acres	yearly	\$1,923.70	\$1,971.17
5	Oak Woodland Understory Grassland	per 25 acres	yearly	\$1,923.70	\$1,971.17
6	Oak Species Composition and Recruitment	per 25 acres	yearly	\$727.27	\$745.22
7	Residual Dry Matter Monitoring	per 25 acres	yearly	\$707.13	\$724.58
8	Ground Nesting Bird Survey	per acre	yearly	\$398.00	\$407.82
General Maintenance Inspections and Tasks					
General Maintenance Inspection:					
9	Level of Service A	per acre	yearly	\$76.38	\$78.26
10	Level of Service B	per acre	yearly	\$152.76	\$156.53
11	Level of Service C	per acre	yearly	\$229.16	\$234.82
General Routine Maintenance:					
12	Level of Service A	per acre	yearly	\$229.16	\$234.82
13	Level of Service B	per acre	yearly	\$458.30	\$469.61
14	Level of Service C	per acre	yearly	\$916.62	\$939.24
General Non-Routine Maintenance:					
15	Level of Service A	per preserve	yearly	\$343.73	\$352.21
16	Level of Service B	per preserve	yearly	\$687.48	\$704.45
17	Level of Service C	per preserve	yearly	\$1,031.21	\$1,056.66
Tree Assessment for Health and Vigor:					
18	Oak Woodland	per acre	yearly	\$108.55	\$111.23
19	Riparian Woodland	per acre	yearly	\$289.45	\$296.59
20	Tree Assessment in Target Safety Zone	per tree	yearly	\$126.63	\$129.76
Public Interaction:					
21	Level of Service A	per preserve	yearly	\$1,374.93	\$1,408.86
22	Level of Service B	per preserve	yearly	\$2,749.87	\$2,817.73
23	Level of Service C	per preserve	yearly	\$5,499.74	\$5,635.47
Vegetation Abatement:					
24	Grazing	per acre	yearly	\$422.13	\$432.55
25	Mowing	per acre	yearly	\$578.92	\$593.21
Creek Corridor Inspections and Tasks					
Winter and Spring Corridor Assessment:					
26	Level of Service A	per acre	yearly	\$76.38	\$78.26
27	Level of Service B	per acre	yearly	\$152.76	\$156.53
28	Level of Service C	per acre	yearly	\$229.16	\$234.82

City of Roseville

Preserve and Open Space Maintenance

#	Activity Cost Description	Calculation Unit	Frequency	Effective July 1, 2025	Effective July 1, 2026
Creek Corridor Routine Maintenance:					
29	Level of Service A	per acre	yearly	\$458.30	\$469.61
30	Level of Service B	per acre	yearly	\$916.63	\$939.25
31	Level of Service C	per acre	yearly	\$1,374.93	\$1,408.86
Creek Corridor Non-Routine Maintenance:					
32	Level of Service A	per preserve	yearly	\$916.63	\$939.25
33	Level of Service B	per preserve	yearly	\$1,833.25	\$1,878.49
34	Level of Service C	per preserve	yearly	\$2,749.87	\$2,817.73
Equipment and Restoration					
35	Post and Cable Fence	per LF	yearly	\$0.35	\$0.36
36	Ranch Fence	per LF	yearly	\$0.49	\$0.50
37	Gates	each	yearly	\$241.22	\$247.17
38	Signs	each	yearly	\$24.12	\$24.72
39	Bollards	each	yearly	\$40.20	\$41.19
40	Vernal Pool Grassland	per acre	yearly	\$27.50	\$28.18
41	Oak Woodland/Savannah	per acre	yearly	\$98.43	\$100.86
42	Riparian Woodland/Wetland	per acre	yearly	\$191.05	\$195.76
RMA Compliance					
43	Prepare and Follow-up of VRF w/Photo Documentation	per preserve	yearly	\$1,615.24	\$1,655.10
44	Pre-maintenance Habitat Survey	per acre	yearly	\$14.55	\$14.91
45	Nesting Bird Survey (other than for mowing) Level A	per acre	yearly	\$175.13	\$179.45
46	Nesting Bird Survey (other than for mowing) Level B	per acre	yearly	\$265.34	\$271.89
47	Nesting Bird Survey (other than for mowing) Level C	per acre	yearly	\$530.67	\$543.77
48	Annual Environmental/Invasive Species Training	per preserve	yearly	\$407.77	\$417.83
49	Fact Sheets/Onsite Cards	per preserve	yearly	\$120.60	\$123.58
50	Annual Report on Routine Maintenance	per preserve	yearly	\$36.18	\$37.07
51	Annual Monitoring Report for Restoration	per preserve	yearly	\$12.07	\$12.37
52	4-Year RMA Status Report	per preserve	yearly	\$4.53	\$4.64

City of Roseville

Street Sweeping, Leaf Pickup, and Bike Trail Maintenance

#	Activity Cost Description	Calculation Unit	Frequency	Effective July 1, 2025	Effective July 1, 2026
1	Street Sweeping	per curb mile	yearly	\$51.88	\$53.16
2	Leaf Pickup	per mile	yearly	\$96.06	\$98.44
3	Bike Trail Maintenance	per LF	yearly	\$1.83	\$1.88

City of Roseville

Stormwater Management

#	Activity Cost Description	Calculation Unit	Frequency	Effective July 1, 2025	Effective July 1, 2026
1	Stormwater Management	residential unit	yearly	\$32.44	\$33.24

[a] Cost per unit may vary depending on total development area and number of units proposed for development.

APPENDIX B-1

PRESERVE AND OPEN SPACE MAINTENANCE

Preserve and Open Space - Summary of Estimated Costs Analysis

The costs of comprehensive maintenance of the City's preserve and open space areas is not insignificant. The range of work encompassed in all the various tasks responds to multiple directives. These include the direction on the Roseville Open Space Preserve Overarching Management Plan; the public's expectations; the Roseville Urban Forest Master Plan (UFMP); and agreements between the City and natural resource regulatory agencies. The table below provides a list of maintenance and monitoring tasks with corresponding source of directive.

Directives for Maintenance Tasks

Task	Overarching Plan	Public Expectation	UFMP	Regulatory Requirements
<i>Contract Biologist</i>				
General Biological Inspection	■			■
Wet Season VP Hydrology and Invertebrates	■			■
Dry Season VP Hydrology and Floristics	■			■
Vernal Pool Upland Grassland	■			■
Oak Woodland Understory Grassland	■			■
Oak Species Composition and Requirement	■			■
Residual Dry Matter	■			■
Ground Nesting Bird Survey	■			■
<i>City Staff</i>				
General Maintenance Inspection	■	■		
General Maintenance – Routine	■	■		
General Maintenance – Non Routine	■	■		
Tree Assessment –Health and Vigor – Oak Woodland	■		■	
Tree Assessment – Health and Vigor – Riparian Woodland	■		■	
Tree Assessment Target Zone Safety	■		■	
Creek Maintenance - Inspection	■	■		■
Creek Maintenance - Routine	■	■		■
Creek Maintenance – Non-Routine	■	■		■
Public Interaction	■	■		
<i>Contracted Maintenance</i>				
Vegetation Abatement - Grazing	■	■		■
Vegetation Abatement - Mowing	■	■		■

In order to adequately fund the management and maintenance of Roseville's more than 4,440 acres of preserves and general open space, annual cost estimates have been developed for the various monitoring and maintenance tasks for each preserve/open space area. Cost estimates may also be used to project the level of funding needed to support management and maintenance of future preserve and general open space acquisitions associated with new development entitlements.

These cost estimates draw from several sources. They include existing and projected cost for contracted services; current costs for City staff based on job duties; and the historical experience of Open Space staff regarding time and effort required to complete certain tasks. Costs approved in 2021 were expressed in 2020 dollars, and this amended version has been adjusted based on the all-urban Consumer Price Index (CPI) for the San Francisco-Oakland-Hayward area from October to October of the immediately preceding year.

Monitoring and Reporting

Biological inspections of preserve areas are required in order to comply with agreements between the City and the regulatory agencies. There is no requirement for biological inspections in general open space areas, however the City recognizes the potential benefit of performing these inspections in the general open space areas to preserve natural resources and enhance residents' enjoyment of these areas.

Biological inspections are conducted by contractors with the specialized experience in resource monitoring and the required regulatory permits. The type and frequency of inspections required for each preserve depends on the natural resources present in the preserve. The Overarching Plan identifies a number of additional biological inspections that are to be conducted at various times during the year. The specific inspections and frequency vary depending on the type of habitat present.

6.1 GENERAL BIOLOGICAL INSPECTIONS

According to the Overarching Plan, general biological inspections should be conducted twice a year in all habitat types. Inspections are done in the summer to maximize probability of detecting invasive plant species. These inspections include:

- General biological function and health of habitat
- Populations of existing or newly established invasive plant species
- Status of any enhancement and restoration efforts
- Presence of any human-caused disturbances to habitat
- Problematic storm water runoff, erosion, or beaver dams

6.1.1 GENERAL BIOLOGICAL INSPECTIONS - COSTS

The cost for this task is derived from analysis of the 5-year contract for biological monitoring services between the City of Roseville and Vollmar Natural Lands Consulting Inc. that was approved in April 2015 plus an inflator of 2.76% for fiscal year 2024-25 cost schedule. The cost includes labor for the designated task as well as an apportioned share of costs for field preparation and reporting. The total cost is then divided by the number of units to be monitored to arrive at a cost per unit per inspection. The Overarching Plan recommends that the general biological inspections occur twice each year, so the resultant cost is doubled to provide an annual cost/unit.

Unit:	acre
Cost per Unit:	\$59.65for 1x/year
Recommended Frequency:	2x/year
Annual Cost/Unit:	\$59.65

6.2 VERNAL POOL GRASSLANDS

The Overarching Plan specifies that surveys of wet season vernal pool hydrology and invertebrates; dry season vernal pool hydrology and floristics; and upland grassland are to be conducted in the vernal pool grassland habitat areas.

6.2.1 WET SEASON VERNAL POOL HYDROLOGY AND INVERTEBRATES

Field surveys of vernal pool hydrology and invertebrates are conducted twice during the wet season (December through March) in preserve areas that include vernal pool grassland habitat. Approximately 10 percent of the pools in these preserves are monitored, with a minimum of 5 pools per preserve or all pools if there are fewer than 5. The preferred target per the Overarching Plan is monitoring for 20 percent of all vernal pools. The wet season vernal pool invertebrate monitoring includes visual inspection of the water column and dip-netting for large brachiopods. About one-fourth of the pools are also sampled for all aquatic invertebrates to determine the presence and abundance of other species. Other environmental data is also collected such as water depth, percent of inundation, temperature, and turbidity. Any hydrological issues such as lack of ponding or flooding from an adjacent creek are also noted.

6.2.2 WET SEASON VERNAL POOL HYDROLOGY AND INVERTEBRATE SURVEY -COSTS

The source and methodology for deriving the cost for this task is the same as described above under General Biological Inspections.

Unit:	vernal pool
Cost per Unit:	\$220.96 for 2x/year
Recommended Frequency:	2x/year
Annual Cost/Unit:	\$220.96

6.2.3 DRY SEASON VERNAL POOL HYDROLOGY AND FLORISTICS

The dry season monitoring of vernal pool hydrology and floristics occurs once a year typically in April or May depending on the timing of peak blooming season. The same pools that are monitored in the wet season are monitored in the dry season. Data recorded at each pool include vegetative cover, dominant species, relative cover of vernal pool species, water depth and cover, bloom status, and a list of all present species. Hydrological data gathered include potential and maximum water depth, percent inundation, and observations of alterations to the natural hydrology such as landscape runoff or man-made features inhibiting drainage.

6.2.4 DRY SEASON VERNAL POOL HYDROLOGY AND FLORISTICS - COSTS

The source and methodology for deriving the cost for this task is the same as described above under General Biological Inspections.

Unit:	vernal pool
Cost per Unit:	\$220.96 for 1x/year
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$220.96

6.2.5 UPLAND GRASSLAND

The Overarching Plan calls for monitoring upland areas each year in late April in the preserves with vernal pool grassland habitat. Each plot is to be 3 meters x 3 meters. All of the selected upland areas are within preserves. The purpose of the monitoring is to document the species composition and any changes in the native and non-native species and thatch accumulation over time. Upland management practices are intended to be adjusted based on the findings. Currently, upland grassland monitoring is being conducted once a year. The plots will be monitored annually in late spring (may be adjusted to ensure good data as needed). Data recorded for each plot will include a species list for the plot, the total cover of vegetation for the plot, the absolute cover of each species listed, and trends noted such as an increase in the presence of invasive plants. The presence of recently established invasive plant species (including problematic species), as well as the expansion of existing populations will be assessed each year in June or July by walking meandering transects through the vernal pool grassland and using data collected earlier in the year during upland grassland monitoring. The results will be used to update the City-wide invasive plant map. Relative cover will be calculated. One plot per 25 acres should be installed.

6.2.6 UPLAND GRASSLAND MONITORING - COSTS

The source and methodology for deriving the cost for this task is the same as described above under General Biological Inspections.

Unit:	25 acres of preserve/general open space
Number of Units:	1
Cost per Unit:	\$1,971.17
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$1,971.17

6.3 OAK WOODLAND/SAVANNAH

The Overarching Plan indicates that understory grassland and oak tree health and regeneration are to be monitored in the oak woodland/savannah habitat areas.

6.3.1 UNDERSTORY GRASSLAND MONITORING

The understory grassland monitoring is to follow the same methods as for the upland grassland monitoring (described above).

6.3.2 UNDERSTORY GRASSLAND MONITORING - COSTS

If monitoring were to be conducted it would follow the same protocol used for upland grassland monitoring with the same costs.

Unit:	25 acres of preserve/general open space
Number of Units:	1
Cost per Unit:	\$1,971.17
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$1,971.17

6.3.3 OAK SPECIES COMPOSITION AND RECRUITMENT

In addition to the annual general assessment of oak tree health conducted as part of the general biological monitoring at each preserve/general open space, the Overarching Plan calls for monitoring oak species composition and regeneration in a minimum of 20 oak woodland/savannah plots every five years during June to July. The designated plots are located in both preserve and general open space areas. One-half of the plots were randomly selected and the remainder selected intentionally in areas where regeneration has been problematic. The goal of the monitoring is to determine if oak recruitment is occurring and if thatch accumulation or grazing practices are inhibiting recruitment. The monitoring protocol calls for establishing 50 meter x 100 meter plots and marking the corners with posts. The location, species, diameter at breast height (DBH) (if applicable), height estimate, and health of each oak tree greater than 3' in height are to be recorded within each plot. Any non-native trees and shrubs are also to be noted. Focused monitoring of the seedlings in the quadrats is done to establish rates and potential cause of mortality.

6.3.4 OAK SPECIES COMPOSITION AND RECRUITMENT - COSTS

The source and methodology for deriving the cost for this task is the same as described above under General Biological Inspections.

Unit:	25 acres preserve/general open space
Cost per Unit:	\$745.22
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$745.22

6.4 RESIDUAL DRY MATTER MONITORING

The Overarching Plan calls for Residual Dry Matter (RDM) monitoring in the late summer or early fall in the same upland and understory grassland plots that are monitored earlier in the year. The purpose of the RDM monitoring is to determine if excess thatch accumulation is inhibiting oak seedling recruitment or encroaching into the vernal pools. RDM monitoring can occur in the understory grassland, in conjunction with the oak recruitment monitoring, if feasible.

Upland Grassland - The Monitoring Biologist will make an annual determination of thatch accumulation using Wildland Solutions Residual Dry Matter monitoring guide used in grazing monitoring (OSPOMP Appendix 29) at the same locations data is gathered for upland grassland monitoring. If excess thatch is present in the uplands (residual dry matter (RDM) exceeding 1,200 lbs./ac.) or marginal grass species are observed encroaching into the

vernal pools during vernal pool floristic monitoring, the Monitoring Biologist will work with the Open Space Manager to determine the best removal practice for each particular site. Several management practices can be used to address this thatch including controlled burning, mowing, or grazing.

Oak Woodland/Savannah - The Monitoring Biologist will make an annual determination of thatch accumulation by using the Residual Dry Matter monitoring guide used in grazing monitoring (OSPOMP Appendix 29) at same locations data is gathered for understory grassland monitoring. If excess thatch is present and appears to be inhibiting the natural recruitment of oak trees, represents a fire hazard, or is in excess of 1,200 lbs./ac., the Monitoring Biologist will work with the Open Space Manager to determine the best removal practice for each particular site. Several management practices can be used to address this thatch including controlled burning, mowing, or grazing.

6.4.1 RESIDUAL DRY MATTER MONITORING - COSTS

The source and methodology for deriving the cost for this task is the same as described above under General Biological Inspections.

Unit:	25 acres of preserve/general open space
Cost per Unit:	\$724.58
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$724.58

6.5 GROUND NESTING BIRD SURVEYS

Ground nesting bird surveys are to be completed in June prior to any mowing. Open Space staff contract for the ground nesting bird surveys to occur in coordination with scheduled mowing (manual or flail) activities or Routine Maintenance Agreement (RMA) activities.

6.5.1 GROUND NESTING BIRD SURVEYS - COSTS

Costs for ground nesting bird surveys are based on input from Foothill Associates professional biologists who routinely perform these services in habitats consistent with those found in the City of Roseville preserve and general open space areas.

Unit:	acre
Time per Unit:	3 hours
Recommended Frequency:	1x/year
Cost per Labor Hour:	\$407.82

Annual Cost/Unit:	\$407.82
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6.5.2 Routine Maintenance Agreement (CDFW)

The City entered into a RMA to perform maintenance within California Department of Fish and Wildlife (CDFW) jurisdiction. CDFW jurisdiction covers maintenance activities that would take place within creeks, improved and unimproved drainage channels, detention basins and constructed water quality swales, associated riparian vegetation, and low floodplains. The agreement requires specific habitat, cultural resource and nesting surveys be conducted and a verification requests forms (VRF) be submitted and approved prior to any maintenance activities on any water.

7.1 GENERAL MAINTENANCE INSPECTION

The Overarching Plan recommends a general maintenance inspection be performed every month in each preserve and general open space areas. However, due to funding limitations general maintenance inspections will be made quarterly to ensure the integrity of City's open space and to locate any problem areas. Inspections of areas that are classified as Riparian Woodland/Wetland habitat are not included in the General Maintenance Inspection as they are assessed in the spring and winter during creek corridor inspections.

Inspections will concentrate on an evaluation of the following factors: fire hazard reduction (in addition to Fire Department monitoring), fencing integrity, condition of signage, trash accumulation, and vandalism. The entire perimeter of the preserve/general open space will be covered, as well as meandering transects through its interior.

An inspection sheet will be utilized to evaluate the above criteria during each field visit. Previous inspection sheets will be reviewed before each visit to ensure that a possible or recurring problem area is not missed. If any problems are identified, more frequent inspections will be conducted to closely track any problems and to ensure that remedial actions are effective. To account for this variability, three levels (A, B, and C) of general maintenance inspection have been established. Level A provides for an average of up to 10 minutes of labor per acre four times per year.

Level B provides 20 minutes of labor per acre, and level C provides 30 minutes of labor per acre over the same period. This approach also recognizes that maintenance labor is not equally spread throughout the year, with some seasons being more labor intensive than others.

7.1.1 GENERAL MAINTENANCE INSPECTION - COSTS

General maintenance inspections are performed by Open Space staff. Costs are based on one staff person experienced with performing these inspections and using burdened labor costs.

Unit:	acre
Time per Unit:	10 minutes (Level A)
	20 minutes (Level B)
	30 minutes (Level C)

Recommended Frequency: 4x/year

Cost per Labor Hour: varies

Annual Cost/Unit:
(Level A)

\$156.53 (Level B)

\$234.82 (Level C)

7.2 TREE ASSESSMENT FOR HEALTH AND VIGOR BY HABITAT TYPE

Tree assessments are to be conducted under the oversight of the City's Urban Forester. These assessments differ from the oak recruitment monitoring done by contract staff in that they are looking at all tree species and the condition of the overall woodland as a component of the City's urban forest. Tree assessment is to be done every third year.

The tree health and vigor assessment of the riparian woodland/wetland and oak woodland/savannah habitat areas includes a general visual inspection of the stands/individual trees to identify evidence of issues such as disease, structural damage, and predation that might indicate a threat to the health and vigor of the habitat. The objective of the assessment is to identify any evident sources of these problems such as excess runoff, vandalism, and root zone compaction that should be addressed through maintenance or management actions. Problem trees are to be tagged and recorded for further action or monitoring; healthy trees are not recorded in order to keep assessment costs down. This tree assessment process is comparable to the Level I visual assessment as

defined by the International Society of Arboriculture (ISA) Best Management Practices and ANSI A300 (Part 9) but with a focus on habitat function/value.

7.2.1 TREE ASSESSMENT FOR HEALTH AND VIGOR - COSTS

Costs for tree assessment for health and vigor will vary by habitat type to account for the difference in tree density between oak woodland and riparian woodland. Costs for these tree assessments are based on input from the City of Roseville Urban Forester and Foothill Associates ISA certified arborists who routinely perform these services in habitats consistent with those found in the City of Roseville preserve and general open space areas.

Unit:	acre
Time per Unit:	3 hours (oak woodland) 8 hours (riparian woodland)
Recommended Frequency:	1x every 3 years – assume 1/3 acre surveyed each year
Cost per Labor Hour:	varies
Annual Cost/Unit:	\$111.23 (oak woodland) \$296.59 (riparian woodland)

7.3 TREE ASSESSMENT IN TARGET ZONE SAFETY

Per the City's Urban Forest Master Plan (pg. 43), objectives 2.B and 2.C, this assessment of trees within the Target Zone focuses on trees within the preserve/general open space boundary that interface with residential/commercial properties or are in proximity to trails and other accessible locations. These assessments are to be done every year. Each individual tree is to be assessed for both tree health and structure (comparable to an ISA Level II survey, e.g. ground-based only). All trees are to be inspected by an arborist holding the ISA Tree Risk Assessment Qualification (TRAQ) with findings recorded on the ISA Basic Tree Risk Assessment Form (Appendix B). All trees will also be tagged, and locations captured as GPS data that will be added to the City's existing GIS-based tree inventory.

7.3.1 TREE ASSESSMENT IN TARGET SAFETY ZONE - COSTS

Costs for this task are based on input from the City of Roseville Urban Forester and Foothill Associates ISA certified arborists who routinely perform these services in habitats consistent with those found in the City of Roseville preserve and general open space areas. The labor rate for this tree assessment is slightly higher than for the woodland assessments due to the greater level of experience required. The recommended frequency assumes that 1/3 of all trees will be inspected every year and the remaining 2/3 of trees will be inspected every fifth year. This reflects the likelihood that most of the trees will be found to be in good condition upon their initial inspection and will only need to be re-examined every fifth year. Only those trees that show potential for developing issues will be looked at annually.

Unit:	tree
Time per Unit:	1 hour
Recommended Frequency:	1/3 of all trees every year and 2/3 of all trees every 5 th year
Cost per Labor Hour:	\$129.76
Annual Cost/Unit:	\$129.76

7.4 SPRING AND WINTER CREEK CORRIDOR ASSESSMENT

All Riparian Woodland/Wetland habitat areas are to be inspected once a year in the spring through summer to identify any maintenance actions that need to take place prior to the close of the maintenance period specified by the regulatory agencies.

The same areas are also to be inspected once a year in the winter months to identify any issues that may be impacting flood conveyance, public safety, or habitat conditions. Specific things to be noted during both spring

and winter inspections include erosion, sedimentation, debris, beaver dams/ damage, bank condition, downed trees, and invasive species.

The area classified as The RCRMP includes descriptions of reference creek segments with desired conditions for each of the creek systems in the City. This information may be used as a benchmark when evaluating creek corridor conditions. An inspection sheet will be utilized to evaluate the above criteria during each field visit. Previous inspection sheets will be reviewed before each visit to ensure that a possible or recurring problem area is not missed. If any problems are identified, more frequent inspections will be conducted to closely track any problems and to ensure that remedial actions are effective.

7.4.1 WINTER AND SPRING CREEK CORRIDOR ASSESSMENT - COSTS

Winter and spring creek corridor assessments are performed by Open Space staff. The level of effort required in each preserve/open space area will vary depending on the density of the riparian vegetation, channel characteristics, and the influence of surrounding land uses. Three levels (A, B, and C) have been established to reflect this variability. Costs are based on 2-person teams using burdened labor costs.

Unit:	acre
Time per Unit:	10 minutes (Level A) 20 minutes (Level B) 30 minutes (Level C)
Recommended Frequency:	2x/year (Winter and Spring)
Staffing:	2 people
Cost per Labor Hour:	varies
Annual Cost/Unit:	\$78.26 (Level A) \$156.53 (Level B) \$234.82 (Level C)

8.0 MAINTENANCE AND MANAGEMENT ACTIONS

Maintenance and management actions in the preserve/general open space areas include scheduled tasks such as maintaining firebreaks; ongoing tasks such as trash removal; and tasks performed on an as-needed basis in response to unpredictable events like vandalism or storms. Maintenance tasks are performed by both Open Space Staff and contract staff depending on the particular task.

8.1 GENERAL MAINTENANCE

General maintenance is to be performed in each preserve/open space area in order to protect the natural resources and for the safety and enjoyment of residents who use or live adjacent to the area. General maintenance is typically performed by Open Space or other City staff. General maintenance tasks may include activities such as:

- Trash removal
- Maintenance of open space edge condition
- Fence installation or repair
- Installation and repair of bollards and gates
- Interpretive signage maintenance
- Informational/ordinance/regulatory signage maintenance
- Transient camp removal
- Invasive species removal/management
- Repairs/restoration/clean-up due to vandalism
- Repairs/restoration/clean-up do to unauthorized uses (bike jumps, forts, OHVs, social trails, etc.)
- Removal of encroachments

The need for general maintenance activities will be identified as part of the quarterly general inspection of each preserve/general open space area. Consequently, each inspection may generate a list of follow-up maintenance actions that are needed. For the sake of cost efficiency, some of these actions may be delayed until a significant quantity of work has accumulated and then all actions will be handled in a single visit as routine maintenance. Other actions will require immediate response due to the nature of the issue and are considered non-routine.

The amount of time typically needed for both routine and non-routine general maintenance in each preserve/general open space area on an annual basis varies depending on multiple factors. These include size of the preserve/general open space area; adjacent land uses; proximity to schools or commercial areas; level and types of recreational use; presence of trails; degree of seclusion; and vegetation density. In some situations, multiple staff are sent out to address issues. Staff time also needs to account for equipment preparation and clean-up time.

To account for this variability, three levels (A, B, and C) of routine and three levels (A, B, and C) of non-routine (A, B, and C) general maintenance have been established. For routine general maintenance, Level A provides for an average of up to 1 hour of labor per acre two times per year. Level B provides 2 hours of labor per acre, and level C provides 4 hours of labor per acre over the same period. This approach also recognizes that maintenance labor is not equally spread throughout the year, with some seasons being more labor intensive than others. For non-routine maintenance, Level A allows for up to 2 incidents per year, with Levels B and C allowing for up to 4 and up to 6 annual incidents respectively.

8.1.1 GENERAL ROUTINE MAINTENANCE – COSTS

General maintenance is performed by Open Space staff. Costs are based on one person with experience with performing these inspections and use burdened labor costs. Three levels of maintenance have been established to reflect variability in maintenance required at individual preserve/general open space areas.

Unit:	acre
Time per Unit:	1 hour (Level A) 2 hours (Level B) 4 hours (Level C)
Recommended Frequency:	2x/year
Cost per Labor Hour:	varies
Annual Cost/Unit:	\$234.82 (Level A) \$496.61 (Level B) \$939.24 (Level C)

8.1.2 GENERAL NON-ROUTINE MAINTENANCE – COSTS

General non-routine maintenance is performed as needed by Open Space staff. Costs are based on the number of anticipated incidents over the course of a year, assuming 1 person will respond to each incident, and using burdened labor costs. Three levels of non-routine general maintenance have been established to reflect variability in maintenance required at individual preserve/general open space areas.

Unit:	preserve
Number of Incidents:	Up to 2 (Level A) Up to 4 (Level B) Up to 6 (Level C)
Number of Labor Hours/Incident:	1.50
Cost per Labor Hour:	varies
Annual Cost:	\$352.21 (Level A) \$704.45 (Level B) \$1,056.66 (Level C)

8.2 PUBLIC INTERACTION

In addition to performing general maintenance at the preserve/general open spaces, Open Space staff also need to respond to general inquiries from residents and develop materials for public outreach and education related to preserve/general open space protection. Some preserve/general open space areas generate calls from residents more frequently than others. The effort required to respond to residents' questions and address their needs can vary widely depending on the nature of the issue. In some cases, a simple phone conversation is adequate, while in others multiple calls, research, and follow-up correspondence are needed. Based on historical experience, Open Space staff have developed a relative sense for which types of preserve/general open space areas require more frequent public interaction than others.

To account for this variability, three levels (A, B, and C) of public interaction have been established. Level A provides for up to 12 hours of labor per preserve/general open space area per year. Level B provides 24 hours of labor, and level C provides up to 48 hours of labor over the same period. Labor includes Open Space staff time to interact with residents, coordinate with other City staff, and develop outreach materials as needed.

8.2.1 PUBLIC INTERACTION - COSTS

Public interaction includes receiving calls and responding to issues. Costs are based on Open Space staff historical experience and burdened labor costs. Three levels of public interaction have been established to reflect variability in issues arising from individual preserve/general open space areas.

Unit:	preserve/general open space
Time per Unit:	12 hours (Level A) 24 hours (Level B) 48 hours (Level C)
Recommended Frequency:	1x/year
Cost per Labor Hour:	varies
Annual Cost/Unit:	\$1,408.86 (Level A) \$2,817.73 (Level B) \$5,635.47 (Level C)

8.3 VEGETATION ABATEMENT

Vegetation abatement includes both habitat management practices and fire break maintenance. Grazing is typically used for habitat enhancement to reduce thatch buildup that had negative effects on habitat. The need for grazing to address habitat issues is identified through the biological monitoring activities. Open Space staff determine what areas are to be grazed and execute an agreement for the total work to be completed on a per acre cost. In some areas, cattle are grazed at no cost to the City. The grazed acres addressed in the OSMMP pertain only to those grazed by sheep and/or goats since there is an annual cost associated with this practice.

The City's Fire Department works with Open Space staff to identify areas where fire breaks are needed. In places where fire breaks overlap with grazed areas, the grazing practice sufficiently addresses the necessary vegetation abatement. In areas not grazed prior to July 1 deadline or areas not suitable for grazing, where fire breaks are needed, mechanical methods such as flailing or hand crews are used. These services are normally performed on a contract basis. Disking is not an acceptable abatement method due to the excessive degree of habitat disturbance. The City has currently identified 2,133 acres of land within preserve/general open space areas for grazing, and an additional 214 acres for supplemental vegetation abatement to implement fire breaks in non-grazed areas.

8.3.1 VEGETATION ABATEMENT - COSTS

Vegetation abatement costs are based on current contracts between the City of Roseville and contractors providing grazing and mowing services.

Unit:	acre
Cost per Unit:	\$432.55 (grazing)
	\$593.21 (mowing)
Recommended Frequency:	1x/year
Annual Cost/Unit:	\$432.55 (grazing)
	\$593.21 (mowing)

8.4 CREEK CORRIDOR MAINTENANCE

The need for specific creek corridor maintenance activities is identified during the winter and spring creek corridor surveys of the Riparian Woodland/Wetland habitat areas. The RCRMP and the Overarching Plan specifically address methods and limitations to be observed when performing creek maintenance so that City actions comply with regulatory requirements. Creek corridor maintenance tasks may include activities such as:

- Trash removal
- Removal of beaver dams
- Clearing fallen trees or other conveyance obstructions
- Bank erosion stabilization/restoration
- Invasive species removal/management
- Transient camp removal
- Repairs/restoration/clean-up due to vandalism
- Repairs/restoration/clean-up do to unauthorized uses such as unauthorized bridges and creek crossings
- Excessive sedimentation or unauthorized fill

The amount of time needed for creek corridor maintenance varies in each preserve/general open space area depending on various factors including width of the channel; extent and character of riparian vegetation; associated watershed size and conditions; ease of access; and degree of human interaction. The number of staff and type of equipment will also vary depending on the extent and complexity of the issue. Some maintenance activities are considered routine and recur on a regular basis, while others are non-routine and are performed only as needed. Staff time also needs to account for travel time to and from the site, and equipment preparation and clean-up time.

To account for this variability, costs for creek corridor maintenance has been divided into routine and non-routine activities. Three levels (A, B, and C) of effort have been established for each. For routine creek corridor maintenance, Level A provides for an average of up to 2 hours of labor per acre two times per year. Level B provides 4 hours of labor per acre, and level C provides 6 hours of labor per acre over the same period. This approach also recognizes that maintenance labor is not equally spread throughout the year, with some seasons being more labor intensive than others. For non-routine maintenance, Level A allows for up to 2 incidents per year, with Levels B and C allowing for up to 4 and up to 6 annual incidents respectively.

8.4.1 CREEK CORRIDOR ROUTINE MAINTENANCE - COSTS

Creek corridor maintenance is performed by Open Space staff. Costs are based on one staff person with experience with performing maintenance and use burdened labor costs. Three levels of maintenance have been established to reflect variability in maintenance required at individual preserve/general open space areas.

Unit:	acre
Time per Unit:	2 hours (Level A) 4 hours (Level B) 6 hours (Level C)
Recommended Frequency:	2x/year
Cost per Labor Hour:	varies
Annual Cost/Unit:	\$469.61 (Level A) \$939.25 (Level B) \$1,408.86 (Level C)

8.4.2 CREEK CORRIDOR NON-ROUTINE MAINTENANCE – COSTS

Non-routine creek maintenance is performed as needed by Open Space staff. Costs are based on the number of anticipated incidents over the course of a year, assuming 4-person teams will respond to each incident and using burdened labor costs. Three levels of non-routine creek maintenance have been established to reflect variability in maintenance required at individual preserve/general open space areas.

Unit:	preserve
Number of Incidents:	Up to 2 (Level A) Up to 4 (Level B) Up to 6 (Level C)
Number of Labor Hours/Incident:	4.00
Cost per Labor Hour:	varies
Annual Cost:	\$939.25 (Level A) \$1,878.49 (Level B) \$2,817.73 (Level C)

City of Roseville
Open Space Maintenance Costs

Description		Annual Unit Cost	Unit
Biological Inspections	General Biological Inspection	\$ 59.65	Acre
	Wet Season VP Hydrology and Invertebrates	\$ 220.96	Pool
	Dry Season VP Hydrology and Floristics	\$ 220.96	Pool
	VP Upland Grassland	\$ 1,971.17	OS
	Oak Woodland Understory Grassland	\$ 1,971.17	OS
	Oak Species Composition and Recruitment	\$ 745.22	OS
	Residual Dry Matter	\$ 724.58	OS
	Ground Nesting Bird Surveys	\$ 407.82	Acre
General Maintenance Inspections and Tasks	General Maintenance Inspection Level A	\$ 78.26	Acre
	General Maintenance Inspection Level B	\$ 156.53	Acre
	General Maintenance Inspection Level C	\$ 234.82	Acre
	General Maintenance Routine Level A	\$ 234.82	Acre
	General Maintenance Routine Level B	\$ 469.61	Acre
	General Maintenance Routine Level C	\$ 939.24	Acre
	General Maintenance Non-routine Level A	\$ 352.21	Preserve
	General Maintenance Non-routine Level B	\$ 704.45	Preserve
	General Maintenance Non-routine Level C	\$ 1,056.66	Preserve
	Tree Assessment - Health and Vigor - Oak Woodland	\$ 111.23	Acre
	Tree Assessment - Health and Vigor - Riparian Woodland	\$ 296.59	Acre
	Tree Assessment - Target Zone Safety	\$ 129.76	Tree
	Public Interaction - Level A	\$ 1,408.86	OS
	Public Interaction - Level B	\$ 2,817.73	OS
	Public Interaction - Level C	\$ 5,635.47	OS
	Vegetation Abatement - Grazing Sheep/Goats	\$ 432.55	Acre
	Vegetation Abatement - Mowing	\$ 593.21	Acre
Creek Corridor Insp./Tasks	Creek Corridor Inspection - Level A	\$ 78.26	Acre
	Creek Corridor Inspection - Level B	\$ 156.53	Acre
	Creek Corridor Inspection - Level C	\$ 234.82	Acre
	Creek Corridor Maintenance Routine - Level A	\$ 469.61	Acre
	Creek Corridor Maintenance Routine - Level B	\$ 939.25	Acre
	Creek Corridor Maintenance Routine - Level C	\$ 1,408.86	Acre
	Creek Corridor Maintenance Non-routine - Level A	\$ 939.25	Preserve
	Creek Corridor Maintenance Non-routine - Level B	\$ 1,878.49	Preserve
	Creek Corridor Maintenance Non-routine - Level C	\$ 2,817.73	Preserve
Equipment & Restoration	Post and Cable Fence	\$ 0.36	LF/Yr
	Ranch Fence	\$ 0.50	LF/Yr
	Gates	\$ 247.17	Each/Yr
	Signs	\$ 24.72	Each/Yr
	Bollards	\$ 41.19	Each/Yr
	Vernal Pool Grassland	\$ 28.18	Acre/Yr
	Oak Woodland/Savannah	\$ 100.86	Acre/Yr
	Riparian Woodland/Wetland	\$ 195.76	Acre/Yr

City of Roseville
Open Space Maintenance Costs

		Annual Unit Cost	Unit
RMA Compliance	Prepare and Follow-up of VRF w/Photo Documentation	\$ 1,655.10	Preserve
	Pre-maintenance Habitat Survey	\$ 14.91	Acre/Yr
	Nesting Bird Survey (other than for mowing) Level A	\$ 179.45	Acre/Yr
	Nesting Bird Survey (other than for mowing) Level B	\$ 271.89	Acre/Yr
	Nesting Bird Survey (other than for mowing) Level C	\$ 543.77	Acre/Yr
	Annual Environmental/Invasive Species Training	\$ 417.83	Preserve
	Fact Sheets/Onsite Cards	\$ 123.58	Preserve
	Annual Report on Routine Maintenance	\$ 37.07	Preserve
	Annual Monitoring Report for Restoration	\$ 12.37	Preserve
	4-Year RMA Status Report	\$ 4.64	Preserve