

412.01 NATURAL RESOURCE CONSERVATION ("NRC") PROCEDURE

Associated Policy: 412 Undeveloped Natural Areas Policy	Date Introduced: October 6, 2020
Name of Responsible Division: Forestry	Date Approved: February 24, 2021
BCRP Executive Director: Reginald Moore	Thung of Manus

DEFINITIONS

- Adaptive Management, in regard to Integrated Vegetation Management (IVM), is a systematic approach to improving resource management. By learning from successive management outcomes, IVM techniques are adjusted to accommodate ecological responses to management the respective site. During successful adaptive management, site requirements typically shift from robust treatment sessions, to seasonal monitoring.
- <u>Baltimore City Recreation & Parks ("BCRP")</u> primarily refers to BCRP's Director; Deputy Director of Parks; the Forestry, Community Engagement and Strategic Partnerships, and Capital Development Divisions; and the Natural Areas Management Unit.
- **Best Management Practices ("BMPs")** are current industry standards for interpreting and implementing the most environmentally responsible and effective approaches to design, construction, urban forestry, and land management.
- <u>Ecosystem Processes</u> are environmental systems and relationships including: the water cycle, nutrient cycling, energy flows, and plant and animal community dynamics.
- <u>Ecosystem Services ("ES")</u> refer to the benefits that nature provides to society, including: regulating services, like reduced urban temperature extremes and flood control; cultural services, such as recreational and educational benefits; provisioning services, like food, fresh water and lumber; and supporting services, such as carbon storage in soils.
- **Ecotype** is the genetic makeup of a plant, concerning the source of the parent plant and its adaptation to the environmental conditions from which it evolved.
- Forest Conservation Plan ("FCP") is a document that outlines the specific strategies for retaining, protecting, and reforesting or afforesting areas on a site, pursuant to the 1991 Maryland Forest Conservation Act. At minimum, it includes: a scaled plan showing: (1) areas required for forest conservation; (2) an afforestation plan showing planting areas on or off-site; (3) a construction timetable; and (4) management and environmental protections for the conservation areas.
- **Forest Stand Delineation ("FSD")** is a document outlining the existing natural features and vegetation evaluated at a proposed construction site. The FSD tree inventory shall include identification of any champion trees, all specimens down to 8 inches, and general makeup and quality of the forest understory.

- <u>IVM</u> is a system of managing plant communities in which compatible and incompatible vegetation are identified; action thresholds are considered; treatment methods are evaluated; and selected treatments, including reforestation, are implemented to achieve specific conservation objectives.
- <u>International Society of Arboriculture ("ISA") Certified Arborist</u> is a professional arborist with a minimum of three years' experience in the tree care industry who has passed the ISA arboriculture examination and maintains an active certification.
- <u>Limit of Disturbance ("LOD")</u> is the furthest extent of the City of Baltimore's ("City") property to which a Right of Entry ("ROE") Permit allows a specified contractor the right to work within or modify.
- <u>Management Practice</u> herein, refers to a structure installed, or management action taken to reduce pollution from sources.
- <u>Natural Areas</u> are a site of cultural or environmental significance due to the presence of natural resources, rare species, natural communities (*i.e.*, forest patches, meadows, wetlands, riparian areas, etc.), important animal assemblages, or other ecological features the contribute to a biologically diverse environment.
- Natural Resource Inventory (NRI) is a site plan map and detailed document including all required inventory and analytical information as described within BCRP's Environmental Technical Manual ("ETM"). The NRI includes, though is not limited to: general site information; environmental features; soil and slope details; the FSD; and wetland study information. A Rapid Site Assessment ("RSA") or Forest Inventory and Analysis ("FIA") may be accepted as alternative documents, upon approval.
- **ROE Permit** is the contractual agreement required for any entity outside of BCRP, which permits access to BCRP property for work specified within the scope of said contract.

PROCEDURE

Construction activity is generally not permitted within undeveloped natural areas on BCRP property. Construction activity proposed within twenty (20) yards of a BCRP natural area triggers the requirements set forth by this procedure. This procedure: (1) outlines BCRP's standards for conceptual design assessments, technical reviews, and operational procedures; and (2) aids BCRP in the evaluation of project proposals and enhance protections for the City's Park system (and the resources within). Any public or private entity and their assigned contractors shall adhere to this procedure. Diversion from these regulations may lead to proposal rejections, agency fines, or stop-work orders. BCRP shall directly inform any contracting agency of permitted exemptions beyond the Conceptual Design Phase. The following projects serve as examples of projects that may receive special permissions: new trail construction or repairs; boardwalks; land management practices; small-scale forest or soil disturbances of 500ft² or less; park amenity installations not requiring vegetation removal; and park enhancements for programmatic activities (*i.e.*, outdoor classrooms).

I. CONCEPTUAL DESIGN PHASE

Prior to the submission of a conceptual project design, all items within this section shall be addressed in order to meet the minimal standards for review consideration.

- **A. Project Proposal Notifications.** BCRP's ROE permitting office shall be notified of any intent to obtain a future ROE request prior to conceptual design development. The notification shall include a detailed description of the need for and benefit of said proposal.
- **B. Site Entry Notifications.** BCRP's ROE permitting office shall be notified a minimum of one (1) month in advance of any contractor surveys or site visits for conceptual plan development. The requirement also applies to infrastructure maintenance and repair activity.
 - **1. Emergency.** In case of a bona fide emergency, contact the Deputy Director of Parks or the BCRP Operations Officer directly for expedited permissions. Should emergency activity result in BCRP Parkland disturbance, remediation shall be discussed with appropriate BCRP representatives to meet the standards outlined in *Sections V VII* below.
- **C.** Community Outreach/Engagement Requirements: A constituent outreach procedure shall be proposed and conducted prior to a ROE permit award. At minimum, outreach initiatives are required at the 30% and 90% design phase. Submit a written plan to BCRP's Community Engagement and Strategic Partnerships Division prior to the request of 30% design approvals.
 - 1. Outreach Efforts. Consult with BCRP to determine obligatory groups and communities for outreach inclusion. Within five (5) years of a construction start date, the 30% design outreach meetings shall be conducted during regularly scheduled public meetings hosted by the local neighborhood(s) or park group(s). Projects with a lapse between early design to implementation require additional engagement initiatives. The 90% design outreach effort may be coordinated as a special event. Subsequent meetings shall be held in response to requests or concerns by community groups. Distribution of outreach material is highly recommended.
- **D. Project Justification Report:** Submit the following to BCRP:
 - 1. A detailed description of the need for and benefit of the project;
 - 2. Alternative actions and non-park locations considered and analyzed;
 - 3. Surveys and models (which may include monitoring reports, soil assays, etc.);
 - 4. Predicted duration of construction;
 - **5.** Detailed map indicating impacted park property and potential LOD;
 - **6.** Efficacy or life-expectancy of the infrastructure; and
 - 7. Major repairs that may or will be required (with its associated timeline).

II. THIRTY PERCENT (30%) DESIGN REVIEW REQUIREMENTS

Should BCRP approve or request additional details from a project proposal, the project shall be developed to the 30% design stage with all elements outlined within this section, for the next round of reviews. BCRP will directly inform any contracting agency of allowable omissions beyond the Conceptual Design Phase, should a project scope justify exemptions.

- **A. NRI and FSD.** An NRI and FSD shall be conducted and packaged for review. Reports shall comply with all items detailed in BCRP's ETM and the Maryland Forest Conservation Act. These reports shall include a thorough analysis of current site conditions and environmentally sensitive areas within 30 meters of the proposed LOD. Include a detailed record of all trees eight inches and greater.
- **B.** Existing Site Condition and Infrastructure Documentation. The condition and record of existing infrastructure and amenities, within 30 meters of the proposed LOD, shall be documented within the NRI for review by BCRP's Deputy Director of Parks' office. Refer to the BCRP ETM NRI checklist for detailed requirements.
- C. Limits to Natural Areas Disturbance. Disturbance proposed within natural areas may be overturned and recommended for alternative sites. If permitted, tree removals and soil disturbance shall be minimized to the greatest extent possible. Current BMPs are required for each construction technique— as such, project designs over three years-old submitted for ROE permissions are subject to a re-review process and beholden to current BCRP policies and procedures. Site evaluations with a BCRP Urban Forester are required for an initial proposed tree removal review.
- D. Project Effectiveness and Infrastructure Monitoring and Maintenance Plan Development. Stream projects shall follow the monitoring program outlined in <u>A Function-Based Framework for Stream Assessment & Restoration Project</u>, as produced by the Environmental Protection Agency ("EPA"). The monitoring and maintenance plan(s) for stream projects shall include an evaluation of the functional stability of stream restoration projects, in addition to the physiochemical and biological functions of the restored or stabilized stream.

 Alternative management practices shall also include monitoring and maintenance plans. Outline all maintenance procedures intended to support project functionality, sanitation, health, and aesthetic considerations in perpetuity of a project's lifespan.

III. SIXTY PERCENT (60%) DESIGN REVIEW REQUIREMENTS

- **A. FCP.** At minimum, the following details shall be clearly defined in the project FCP:
 - 1. Number of acres disturbed;
 - 2. Number of replantable acres available on site;
 - **3.** Fee-in-lieu estimates;
 - **4.** The anticipated acreage for IVM (including the entirety of the LOD and 50' beyond each side of the right of way (*See infra Section III* (*F*)); and
 - **5.** A tree inventory indicating specimen removals, protections, and specimens to be harvested for and processed by Camp Small (*See infra Section III* (*C*)).
- **B.** Access Roads, Site Entry, and Accessibility. Site entry and access roads shall be determined with input from BCRP's Forestry Division for the least impactful pathway into each site. Large machinery may be restricted from sensitive areas, thus necessitating narrowed access roads and maneuverable equipment.

- 1. Mulch Matting Specifications. Heavy-duty mulch matting specifications are required for all forested areas, 100-year floodplains, wetlands, and steep slopes. The specification includes a 12" layer of mulch held between an upper and lower layer of Type C Geotextile filter fabric topped with hardwood timber matting. Matting containing monofilaments/plastics are not permitted. Soil Stabilization Mulch Filled Socks shall be used to hold mulch and timber matting in place on either side of the LOD (wherever state and federal regulations permit)—otherwise, silt or super silt fencing shall be used (*See* BCRP's ETM).
- **2. Sourcing Mulch.** Mulch used for site stabilization, soil protection, and tree mulching shall be sourced from trees approved for chipping on site or obtained from Camp Small—unless otherwise approved by BCRP's Forestry Division.
- **C. Camp Small Trees for Harvest.** As BCRP assets, BCRP's Forestry Division may choose trees slated for removal to be harvested for the City's Camp Small Wood Reutilization Recycling Facility projects. The contractor is responsible for proper care, inventory, and delivery of logs per the specifications provided by BCRP's Forestry Division. Selected trees shall be clearly flagged in the FCP.
- **D.** Material Sourcing of On-Site Resources. Any natural resources proposed for use or harvested on-site must be approved by BCRP (including, but not limited to: root wads, boulders, trees for mulch, etc.). Costs for the use of natural resources may be incurred based on City evaluations and market rates.
- **E. Permanent Access Road Restrictions.** Permanent access roads are not permitted within BCRP natural areas. Temporary access roads shall be restored with woody vegetation, though agreements may be established for future expedited access.
- **F. IVM Plan.** IVM is required for any project within 50 feet of the edge of a forested natural area. IVM shall be implemented prior to construction, followed by an IVM commitment to span three (3) to five (5) years once construction is complete. An ongoing adaptive management commitment is then required for a minimum of ten (10) years or throughout the entirety of the Franchise Agreement, where applicable. The adaptive management period may be adopted by BCRP's Forestry Division for management and implementation, albeit funded by the responsible agency, if agreed upon by both parties.
 - 1. IVM Specifications. IVM specifications shall match or expand upon the standard BCRP IVM specifications for construction projects (contact BCRP's Forestry Division for up-to-date IVM specifications). Specifications shall include site-specific details and plans to prevent the spread of non-native invasive species.

IV. NINETY PERCENT (90%) DESIGN APPROVAL REQUIREMENTS

A. City Tree Mitigation Standards. In addition to State of Maryland and Baltimore City Forest Conservation Act requirements, any tree 8 inches or greater cleared from BCRP Parkland shall be mitigated inch for inch. Should the Department of Planning FCA mitigation requirements be triggered for trees 20 inches and above, multiple charges for such trees will not be incurred.

- 1. Tree Mitigation Payment. Tree mitigation shall first occur within the area of removal, with one hundred, two-inch trees per acre, or as otherwise approved by BCRP. Off-site mitigation shall be paid in the form of a fee-in-lieu at the current BCRP City tree planting contract cost (\$220/inch, as of January 2020). For internal City agencies: An inter-agency memo indicating the agreed-upon tree mitigation fee-in-lieu payment, shall be submitted with signatures to BCRP, prior to a ROE award.
- **B.** Soil Rehabilitation Plan ("SRP"). A site-specific soil rehabilitation plan shall be developed for each project. Soil rehabilitation may include, though is not limited to: soil testing, decompaction, topsoil restoration, organic composting, soil amendments, soil profile rebuilding, and cover crop rotations. Above and beyond, soil conditioning may be required under certain scenarios. See the ETM for details on generating the SRP.
 - 1. Soil Compaction and Disturbance. Soil compaction and disturbance, resulting from construction activity, is counterproductive to the City's Total Maximum Daily Load ("TMDL") permit goals for reducing impervious surface area for stormwater management. Thus, should soil bulk density within a construction work zone increase by 0.17 g/cm³ or more, the contractor shall be responsible to implement the full SRP during site restoration.
- **C. Mitigation Planting Plan.** The soil and vegetation mitigation plan shall include a broad overview as well as detailed specifications. Within the planting plan, delineate discrete planting zones and note the total feasible planting area. Indicate proposed species, quantities, spacing, size, and protective measures for each zone. Forest-edge plantings shall follow the structural planting specification provided by BCRP's Forestry Division to mimic natural forest edge structures.
 - 1. Native (non-cultivar) Species. Native (non-cultivar) species shall be used for natural areas mitigation. Source all plant material from within 300 miles of the City to meet local ecotype requirements. Trees shall be two inches in caliper and number 200 inches per acre, unless otherwise approved by BCRP's Forestry Division. See specifications for bare root stock permissions and container size.
 - **2. Shrubs.** Shrubs may be approved for mitigation on a 10:1 shrub to tree ratio, though due to deer browse and maintenance concerns, the use of shrubs may not be appropriate for certain parks and will thus be omitted at the behest of BCRP.
 - **3.** Temporary and Permanent Seed Mixes. Temporary and permanent seed mixes shall be included for review and feature native species at every possible opportunity. See the ETM for species recommendations.
- **D.** Evaluation of Ecosystem Service Degradation and Park Revenue Disruptions. Tree clearing, soil compaction, and park closures are subject to an assessment from BCRP to determine the loss of Ecosystem Service benefits to the City during and following construction. An annual or one-time, lump sum payment may be required for annual impacts projected by construction disturbances. The fee is based upon the number of years anticipated for ecosystem recovery, revenue disruptions, or amplified maintenance burdens.

- **E.** Horizontal Directional Drilling (HDD) Contingency Plan. When HDD is permitted, a signed, site-specific contingency plan shall be developed prior to the award of a ROE permit. Contact BCRP's Forestry Division for a Contingency Plan outline.
- **F.** Camp Small Notifications. The Camp Small Wood Reutilization Coordinator shall be notified of all estimated orders and quantities of wood-related supplies for the project, including tree stakes and mulch. An estimated project timeline shall be provided at this time.

V. PRE-CONSTRUCTION

- **A. Franchise Ordinance.** Projection of any private use or construction into the area of a public park requires that the City grant a limited right to permit the encroachment. Projections that exceed those listed as a *minor privilege* require a franchise ordinance approved by the Mayor and City Council. Contact the Department of General Services ("DGS"), Right-of-Ways Section, for details.
- **B.** Mitigation Fee-in-Lieu. As determined by BCRP's Forestry Division, FSDs older than three (3) years, may be subject to re-review. A new delineation or a multiplier may be added to tree removal charts to determine anticipated mitigation—in which case, a record of trees slated for removal shall be accurately maintained by the responsible contractor.
 - 1. Payment Timeline. Within thirty (30) days of receiving the ROE permit, 100% of any off-site tree mitigation fee shall be paid (or transferred) to the designated BCRP Mitigation account. Any subsequent mitigation funds (including those for additional trees removed during field changes) are due 365 days' post-construction start date or 30 days' post-construction completion or end date, whichever is later. If payment is not received in the stated timeline, the ROE may be canceled and a stop-work order enforced. Funds shall be held by BCRP until project completion, for any necessary reimbursement.
- C. Pre-Construction Meeting. A meeting shall be hosted by the contracting agency and shall include representatives from: BCRP's Forestry Division, BCRP's Capital Development Division, BCRP's Camp Small, and all awarded contractors and their subcontractors. Discuss the operational procedures, herein, as well as additional options to avoid or minimize disturbance to sensitive areas. Submit a detailed construction schedule and contact list to BCRP at this time.
- **D.** Construction Activity Signage. Approval and installation of project signage is required prior to tree removals or construction activity. Informative signage (that meets specifications within the ETM) shall be posted to ensure community awareness and safety during project construction. During sediment and erosion control installation, signage for contractors shall be installed to restrict contractor activity and equipment from property encroachment beyond the LOD. All signage and posts shall be removed upon final project acceptance.
- **E. IVM Implementation.** Per the technical specifications provided by BCRP's Forestry Division, pre-construction IVM shall entail the removal or treatment of non-native invasive vegetation within the Right of Way to prevent the subsequent spread of problematic plants. IVM and construction equipment shall be cleaned prior to site arrival, as well prior to leaving the project site.

VI. CONSTRUCTION PHASE

- **A. Communications.** The contracting agency shall assign a primary point of contact to communicate with BCRP throughout construction. Said individual shall coordinate with, and at minimum, include BCRP in: monthly progress meetings, weekly call-ins (as applicable), scatter sheets, and inspection reports. The project's point of contact shall ensure close communication with designated BCRP staff. Any emergencies, compliance issues, or plan modifications shall be brought to the attention and review of BCRP within 24 hours.
- **B. Seasonal Work Restrictions.** Neither tree cuttings nor removals are permitted between April 15th August 15th. Tree planting shall only occur between the windows of March 15th to May 15th (Spring) and October 1st to December 1st. Designated meadows shall only be mown on an agreed upon schedule, not to be mown between April 15th August 15th (nesting season). Anticipated work schedules shall be submitted for BCRP's Forestry Division review.
- **C.** Construction Sequence. A construction sequence plan shall be established to prevent soil and tree root disturbance and shall receive BCRP approvals prior to commencement.
 - 1. **Preparatory Activity.** Any preparatory activity requiring vehicular equipment or machinery within the LOD, shall be preempted with tree protection fencing, and at minimum, partial soil protections including 12" of mulch and mulch filled socks (as permitted by BCRP's Forestry Division). Non-tracked equipment is not permitted within the LOD until all access road protections are in place.
 - **2. Soil Protection Measures.** Soil protection measures including, but not limited to: geotextiles, mulch and matting; tree protection fencing; equipment restrictions; and root pruning must be initiated before equipment enters the work area.
- **D. Site Preparation and Tree Clearing.** The LOD shall be staked and adjusted to minimize damage to trees and tree roots. Trees slated for removal shall be clearly flagged and adapted, as approved by all parties. An ISA Certified Arborist shall be present on-site during all tree removal and limbing procedures and shall meet current ISA-standards. All trees selected for Camp Small Processing shall be clearly marked, processed, and delivered as discussed.
 - 1. Tree Identification. Trees unidentified for removal in the FCP, but subsequently identified as compromised by construction activity during field verification, must be reviewed for removal or additional protections and will be held to the same mitigation standards as previously discussed. Additional tree removals, approved by BCRP's Forestry Division, shall be documented in the field with the following information: location, tree species (as identifiable), size Diameter at Breast Height, and condition. Field verification shall be offered to BCRP prior to initiating removals.
- **E.** Tree Protections and LOD Boundary Identification. All work will be performed to meet or exceed current industry standards. Beyond site preparations and prior to construction, minimally invasive metal wire fence with orange flagging and signs shall be installed along the entire project LOD to keep personnel, activities, equipment, and materials exclusively within the work area. Trees to be preserved inside the LOD shall be protected with matching metal wire fence

- and signs at the edge of the Critical Root Zone, though additional tree protection fencing or silt fencing may be required. No personnel, equipment, or materials are permitted within the critical root zone of any preserved tree.
- **F.** Sediment and Erosion Controls, LOD Indicators, and Tree Protection Measures. Soil stabilization mulch-filled socks shall be used in place of super silt fence (wherever state and federal regulations permit) to protect tree roots. Neither silt nor super silt fencing may be installed within the primary root system of any tree (*i.e.*, three (3) times a tree's circumference). Root pruning, as specified by BCRP's Forestry Division, shall be performed wherever grades will be lowered within the critical root zone of a tree to be preserved. Blades shall be sharpened daily, prior to the beginning of the operations.
 - 1. Timeframe of Mulch and Matting Placement. Mulch and matting (*See supra Section VI* (*C*)) shall be in place prior to the arrival of materials, heavy machinery, and non-tracked vehicles.
- **G. Staging and Storage.** The surface beneath the dripline or critical root zone of all trees shall be kept fully clear of machinery, equipment, supplies, soil, and debris staging. On-site equipment storage after work hours is prohibited, unless otherwise approved.
- **H.** Quality Control and Non-Compliance During Construction. Emergencies or non-compliance issues shall be mitigated within 48-72 hours, or a stop-work order may be issued, and an accruing fee imposed.
- **I. Site Damages.** Any property or environmental damages attributable to the installation, maintenance, and monitoring of the project site shall be restored at the expense of the operating entity to equal or better pre-construction conditions, as approved by BCRP. Soil remediation and conditioning may be required.
- **J. Delayed Construction Timeline or Extended Construction Timeline.** Should construction activity extend beyond the anticipated timeline, each additional day may accrue a maximum fee of up to \$3,000 per day, as determined by BCRP, within reason.
- **K.** Construction Acceptance. Construction acceptance by BCRP shall be conducted prior to site restoration.

VII. POST-CONSTRUCTION OR PRE-PLANTING

- **A. Pre-Job Briefing.** The briefing shall address the site restoration plan and schedule, as well as outstanding issues. All essential BCRP representatives from BCRP's Forestry, Capital Development, and Park Maintenance Divisions shall be included.
- **B.** Soil Remediation Implementation. Soil remediation practices shall follow pre-approved plans and soil testing requirements as agreed upon during the project's design phase.
- **C. Site Stabilization.** All temporary and permanent seed compositions used for stabilization in or near natural areas shall be pre-approved by BCRP. Use of MD/US native and non-invasive vegetation is expected. Seeding of fields or turf shall match surrounding turf species.

- **D. On-Site Tree Mitigation.** Tree planting shall occur between March 15th to May 15th (Spring) and October 1st to December 1st. All trees shall be planted to BCRP specifications with adequate deer protection implements. See the ETM for details.
 - 1. **Mitigation Planting.** Mitigation planting shall always occur at the next most opportune planting season immediately following final construction acceptance. Any delays in mitigation may accrue a fine from BCRP.
 - **2. Approval.** Planting plans, species composition, and nursery stock inspection shall be approved by BCRP's Forestry Division.
- **E. Project Acceptance.** Post-construction reviews will be conducted by BCRP in partnership with community constituents. Final acceptance of the project is not complete until this step is finalized.
- **F.** Maintenance of Mitigation Plantings. All on-site tree mitigation activity shall follow BCRP's maintenance specifications, which include follow-up maintenance and a full two-year warranty. Monthly monitoring and maintenance is required during the two-year warranty, and tree replacements shall occur on a rolling-basis, as needed during the warranty period within each planting season. Replacements shall occur during the season a tree is determined stressed, dead, diseased, or compromised. The contractor must host a minimum of two (2) annual site inspections with BCRP's Forestry Division each year during the two-year maintenance period.
- **G. Project Effectiveness and Infrastructure Monitoring and Maintenance Plan Implementation.** Infrastructure monitoring and maintenance, as detailed in the Project Effectiveness and Infrastructure Maintenance Plan, is the responsibility of the contracting agency. At minimum, monitoring reports shall be submitted to BCRP every two (2) years while the infrastructure remains in use or under contract to be eligible for future access to the management practice via BCRP Park's property.
 - 1. Extreme Weather. Following flash floods, heavy rain events or other extreme weather scenarios, the infrastructure and project site shall be monitored and maintained within a reasonable timeframe. Thorough analysis and action responses shall be included in all biannual reports. Should a maintenance practice or a physical structure begin to fail or require repair, BCRP shall be notified within 72 hours.