

APPENDIX A: SITE PLANNING CHECKLISTS

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APPENDIX A: SITE PLANNING CHECKLISTS

The following checklists are provided to help ensure that information critical to implementing LID sites is available during the early site planning phase. Perform at least “blue font” checklist items and submit with Permit Application Package when using the Simplified Sizing Approach. Checklist is required for Simplified Sizing Approach and recommended for the Engineered Design Approach.

SITE ASSESSMENT CHECKLIST

A site assessment checklist¹ in both Adobe Acrobat Reader (.pdf) and Excel (.xls) format has been provided on the City of Grants Pass webpage at [enter URL here]. The following is a checklist of items that are directly or indirectly related to water quality and may be helpful to investigate when inventorying the site.

Conditions that are most relevant to correctly implementing BMPs in this guidance are written in blue.

(See Checklist after Page A-5)

SITE SURVEY PLAN

The area of survey may vary and should include, at a minimum, at least 10 feet beyond the *area of disturbance* proposed. The *area of disturbance* may vary greatly from the *proposed project improvements* and can depend on such things as the proposed site layout, on-site slopes and existing grades, and locations of public utilities where proposed connections will be made.

For all new development and re-development projects, a surveyor should survey the following minimum items and accurately map them, if present on-site:

Legal:

- Right of ways on both sides of all street frontages
- Property and lot lines with bearings & lengths
- All easements
- Legal description
- Tax lot info
- Street names

Surveyor data:

- Benchmarks
- Monuments
- Iron pipes
- Brass screws
- Basis of bearings & elevations
- North arrow
- Professional stamp
- Contact info for surveyor

Elevation data:

- Contours in appropriate intervals (0.5' for flat areas, 1' for average areas, and 2' for steep areas)

¹ Adapted from the Southeast Michigan Low Impact Development Manual with permission from the Southeast Michigan Council of Governments.

- Spot elevations on a 25-foot grid and at changes in grade such as at walls, curbs (indicate top of curb and gutter elevations or curb height), flow lines, swales and ditches, centerline and/or crown or valley, etc.
- Both contours and spots should extend at least 10' beyond the property line and/or across the street to the curb

Utilities:

- Utility vaults and above-grade fixtures such as gas valves, water valves, water meters, traffic boxes, fire backflow assembly, water backflow assembly, fire hydrants, etc.
- Storm structures including catch basins, manholes, water quality facilities and devices, cleanouts, etc. Include all relevant elevation data including rim elevations and invert elevations; pipe size and direction if more than one pipe. In the public ROW, provide information for at least two storm manholes or more if necessary so that inverts all along pipes fronting the property can be found.
- Power poles (indicate with a symbol where the guy wires extend), light poles, traffic poles, overhead lines.
- Sewer manholes and cleanouts. In the public ROW, provide information for at least two sewer manholes or more if necessary so that inverts all along pipes fronting property can be found. Subsurface pipe and cable network marked out by a utility locate company for water lines, storms sewers, sanitary sewers, telephone, cable, gas, etc. that serve the site

Land Cover:

- Extent of buildings with dimensions of buildings and dimensions to property lines
- The boundaries of all land cover types such as asphalt, gravel, concrete, bus shelters, etc.
- For street frontages, survey should extend across the street to include curb line, pedestrian ramps, and sidewalks.
- Water features such as wetlands, streams, ditches, ponds, etc.
- Walls (show length & width)
- Site furniture such as bollards, benches, fences, etc.
- Trees with greater than 3" diameter, tree wells, and major vegetation such as hedges. Include type of tree and draw spread of branches to scale and outline of massed trees.

INFILTRATION TESTING REPORT

BMPs that require an infiltration test to properly implement include conserve fast(er) draining soils, minimal excavation foundations, porous pavement, rain gardens, stormwater planters, LID swales, dispersion (vegetated filter strips and downspout disconnections), soakage trench, drywells, water quality conveyance swales, wet ponds, wet extended ponds, and dry detention ponds.

The infiltration testing report should include:

- A test for every 10,000 square feet or per qualified professional.
- Flow rates in inches/hour of soil horizons that may be used for infiltration, considering infiltration facility type and construction.
- Investigation by over excavation after testing to confirm sufficient depth to water table (3'), bedrock (2'), or other confining soil layer (2').
- Map with locations of testing.

TREE INVENTORY REPORT

To implement the Cluster Development BMP or the Tree Protection BMP, an International Arboriculture Society certified arborist should provide, at a minimum, the following information:

For each tree:

- Common name
- Tree number corresponding to mapped location

- Diameter at breast height
- Health
- Height
- Limb spread

General:

- Maintenance recommendations
- Hazardous trees to be removed
- Specimen or potential heritage trees worth saving
- Construction and maintenance phase tree protection recommendations
- Understory condition
- Limits of contiguous cover
- Areas where stands of trees might be healthy if other trees are removed for development

Map showing:

- Tree location and number
- Healthy tree stands

DEPAVING PROJECT CHECKLIST

The following is a checklist of major steps in a depaving project. Refer to Chapter 4 “*Minimize Impervious Area: Depave Existing Pavement BMP*” for detailed guidance.

- Locate utilities (Call 811 to mark underground utilities in the public right-of-way. If uncertain about the location of private utilities likely to be within the depaving area, call a private utility locate company, also.)
- Perform an infiltration test (see Appendix C: Infiltration Testing)
- Test soil for contamination, as needed
- Draw up a site plan and a planting plan
- Make a budget based on the design
- Obtain permits
- Order a drop box for pavement materials to be stored and hauled away
- Find volunteers or contractors
- Prepare the surface
- Depave
- Remove gravel
- Excavate and grade per plans
- Restore soils per Chapter 4 “*Restored Soil BMP*”
- Install landscaping
- Perform other site work defined on site plan

Sustainable Site Planning Checklist

	Check	Notes
Consider on-site natural resources		
Water Resources:		
Wetlands?		
Floodplains?		
Wellhead protection areas?		
Existing well?		
Riparian buffers?		
Naturally vegetated swales/drainageways?		
Seasonal high water table?		
Problems with run-on from neighboring properties?		
Land Forms:		
Steep slopes?		
Existing topography, contours?		
Depth to bedrock?		
Existing land cover/uses?		
How does size and shape of the site affect stormwater mgmt?		
Are there areas where development should generally be avoided?		
Evidence of soil erosion/landslides?		
Soils:		
Hydrologic soil groups?		
Tested infiltration rates?		
Erodibility?		
Swell potential?		
Hydric solid present?		
Texture?		
Fertility?		
Soil biology?		
Chemical properties? (pH, macro- & micronutrients)		
Livability:		
Aesthetics?		
Viewsheds?		
Sense of place?		
Opportunities to create private, semi-private, and public spaces?		
Noise source?		
Microclimate:		
Wind tunnels caused by vegetation/building orientation?		
Wind breaks?		
Solar access?		
Temperature variation?		

Sustainable Site Planning Checklist

	Check	Notes
Evaporation/moisture variation?		
Vegetation:		
Special status trees?		
Threatened or endangered species habitat?		
Blocks of habitat and corridors or connections between habitat patches?		
Native plant communities?		
Distinctive individual plants or communities?		
Vegetation that could provide shade to buildings, parking lots, or recreational areas?		
area?		
Invasive species/noxious weeds?		
Wildfire risks?		
Resources to be salvaged (topsoil, boulders, rocks, trees, etc.)?		
Renewable Energy:		
Geothermal?		
Wind?		
Hydroelectric?		
Solar?		
Air Quality:		
Pollen Sources?		
Smoke sources? (controlled burns, wildfire, etc.)		
Consider on-site infrastructure/built environment.		
Utilities:		
Wastewater system?		
Stormwater system?		
Structures with potential to serve as cisterns? (pools, spaces under existing buildings, etc.)		
Water?		
Gas?		
Electric?		
Communication?		
Livability:		
Beloved infrastructure? (Gathering spaces, arbor, etc.)		
Cultural:		
Historic infrastructure? (signs, bridges, entryways)		
Historic register? (Local, state, or national?)		
Archeological site?		
Air Quality:		
Areas of idling?		
Land Coverage/Uses:		

Sustainable Site Planning Checklist

	Check	Notes
Total site area		
Impervious area:		
Impervious area covered by evergreen tree canopy		
Impervious area covered by deciduous tree canopy		
Roof		
Sidewalks		
Vehicular pavement		
Other (swimming pools, basketball court, etc.)		
Semi-porous area		
Lawn		
Naturalized		
Ornamental beds		
Food gardens		
Paving surfaces (pavers, mulch, boardwalk)		
Other		
Porous area		
Forest		
Project data:		
Contaminants from past uses (leaking tanks, pesticides, herbicides, etc.)?		
Existing stressors (noise, odor, excessive light, etc.)?		
Infrastructure to be salvaged (asphalt, concrete, buildings [deconstruction])?		
Water Resources:		
Fish/mammal barriers to passage?		
Off-site drainage?		
Drainage patterns before and after finish grading?		
Locations of discharge outfalls/points?		
Size of discharge outfalls/points?		
Type of discharge outfalls/points?		
Areas used for storage of soils or wastes?		
Erosion and sediment control facilities/structures including vegetative practices?		
Staging/Storage Considerations:		
Disturbance area?		
Total surface area of the site, broken down by phases of development?		
Timetable for sequence of major events?		
Type of material used for fill?		
Volume of cut?		

Sustainable Site Planning Checklist

	Check	Notes
Volume of fill?		
Recycling area?		
Composting area?		
Consider regional natural resources.		
Water Resources:		
Receiving water body for site drainage?		
Major/minor watershed location?		
EPA Level III ecoregion (EPA website)?		
State stream use/standards designation/classification?		
Special high quality designations? (e.g., natural rivers, cold water fishery)		
Rare or endangered species or communities present?		
Are there required water quality standards?		
303d/impaired stream listing classifications?		
Existing or planned Total Maximum Daily Loads (TMDLs) for the waterbody?		
Aquatic biota, other sampling/monitoring?		
Other special fishery issues?		
Neighboring wells?		
Downstream flooding problems?		
Vegetation:		
Major habitat types?		
Regional connection to a special habitat system (migratory routes, wildlife corridors, etc., neighboring publicly owned natural lands)?		
Wildfire risks?		
Land Development Impacts:		
Additional development anticipated for the area that could lead to further restrictions? (e.g., protection of downstream land and water uses)		
Additional development anticipated for the area that could lead to further opportunities? (e.g., partnerships in multi-site or regional water quality or quantity controls)		
Nearby construction sites that may have natural materials that can be salvaged for use on your site?		
Macroclimate:		
Seasonal wind direction?		
Wind speed?		
Annual and monthly precipitation patterns?		
Annual solar budget?		

Sustainable Site Planning Checklist

	Check	Notes
Air Quality:		
Particulates?		
Pollen?		
Dissolved pollutants?		
Smoke?		
Consider regional infrastructure/built environment.		
Utilities:		
Sanitary sewer system?		
Water?		
Storm drainage system?		
Gas?		
Electric?		
Communication?		
Livability:		
Transportation options (mass transit, bicycle & pedestrian facilities, roadways)?		
Recreational opportunities, community resources, and other amenities?		
Existing stressors (noise, odor, excessive light, etc.)?		
Walkable?		
Neighborhood architectural context?		
Cultural:		
Historical values, certified or non-certified?		
Known/potential archaeological values?		
Suppliers of materials and services locations:		
Native plant nurseries?		
Local manufacturers/suppliers of building materials?		
Deconstruction services?		
Re-use facility for salvaged materials (Restore, Rebuilding, etc.)?		
Recycling facility for construction waste?		
Air Quality:		
Located on busy street?		
Located on truck route?		
Areas of idling?		
Street canyons?		
Consider municipal, state, and federal guidelines/laws.		
Master plans (Stormwater, Transportation, Parks, Watersheds, etc.):		
Is development concept consistent with the master plan?		

Sustainable Site Planning Checklist

	Check	Notes
Consistent with goals/policies of the plan?		
Preservation of natural resources consistent with priority areas/maps?		
Water regulations (e.g., ordinances, engineering standards):		
Consistent with local existing regulations?		
Wetland regulations?		
Tree/woodlands ordinance?		
Riparian buffer ordinance?		
Open space requirements?		
Clustering and/or PUD options?		
Overlay districts?		
Wellhead protection?		
Erosion and sedimentation requirements?		
Are LID solutions:		
required?		
or incentivized?		
or enabled?		
or prohibited?		
Reduced building setbacks allowed?		
Curbs required?		
Rain gardens, stormwater planters, green streets allowed?		
Street width, parking requirements, other impervious requirements?		
Grading requirements?		
Landscaping that allows native vegetation?		
Stormwater requirements?		
Peak rate?		
Total runoff volume?		
Water quality?		
Maintenance?		
State floodplain requirements?		
Contaminated sites have followed state "due care" requirements for soil and groundwater?		
Consistent with state and federal wetland and/or inland lakes and streams regulations?		
Other Regulations?		
State and federal threatened and endangered species?		
Consistent with county/state road requirements?		
Fire Department:		
Recommendations for wildfire areas?		
Vehicular circulation?		

Sustainable Site Planning Checklist

	Check	Notes
Road widths?		
Cul-de-sac/hammerhead requirements?		
Planning:		
Zoning ordinances?		
Urban renewal?		
Comprehensive plan overlay?		
Historic resource?		
Conservation overlay?		
Setbacks:		
front		
side		
back		
other		
Required minimum outdoor area?		
Consider the programmatic requirements.		
is development concept consistent with the master plan?		
Consistent with owner's programmatic needs for sites and buildings?		
Stakeholder Process:		
Does the site have current users? Can these uses be accommodated in the new design?		
Who are the new users?		
Integrated design team roles defined?		
Project principles and goals defined?		
Purpose for project and design intent defined?		
Future primary and secondary stakeholders identified?		
Environmental and social goals defined (qualitative, quantitative)?		
Stakeholder engagement/charrette?		