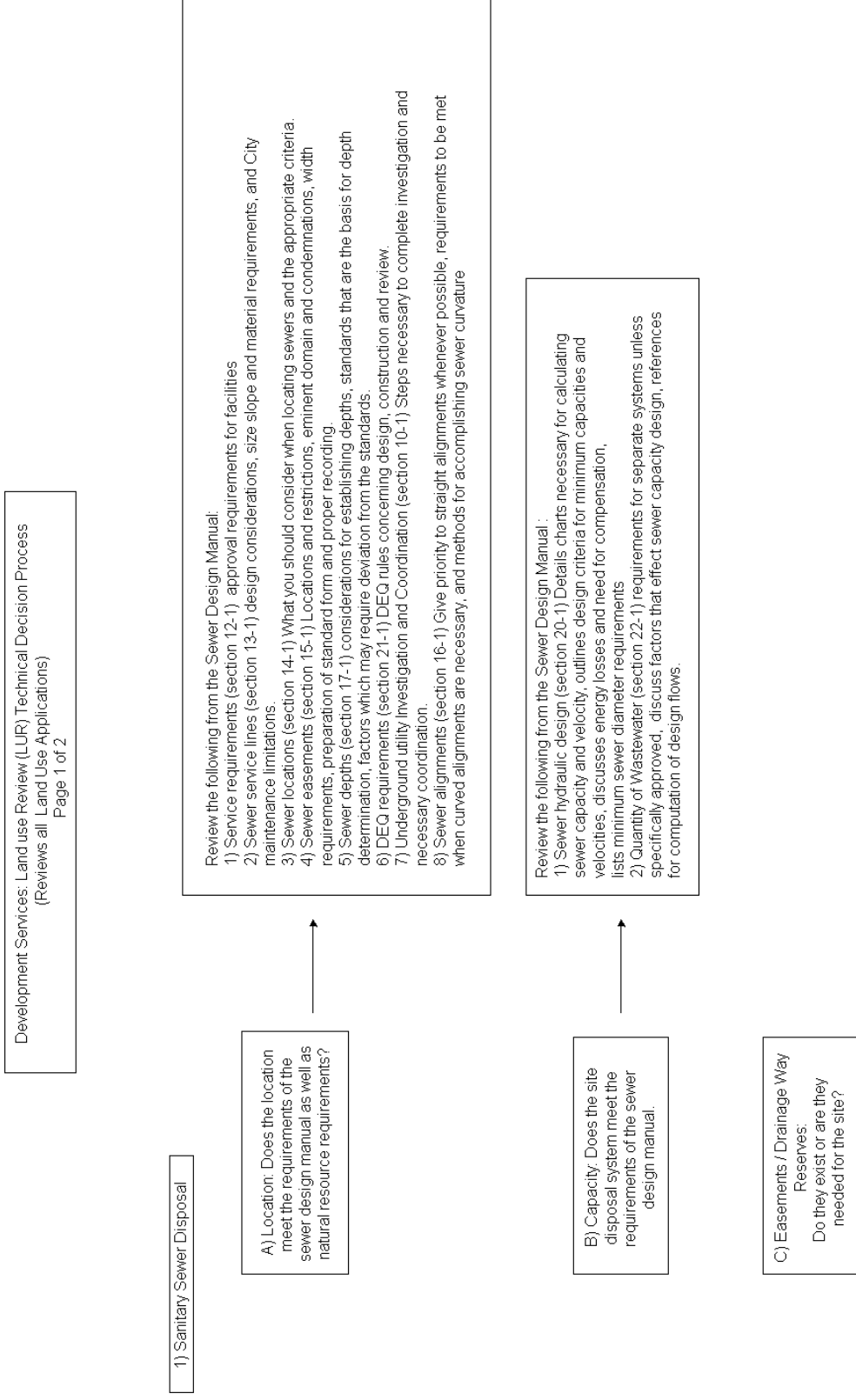


## Appendix B – Technical Review Flow Diagrams

These flow diagrams outlining the technical decision making process for each group. The diagrams are intended to provide general guidelines regarding the current technical decision process. Variances from these diagrams are dependent on site-specific conditions. These flow diagrams are intended to define the current system of review. Any improvements to the process will be identified and developed as necessary.



2) Stormwater Management

A) Surfacewater Policy and Stormwater Management (Section 23-1 of Sewer Design Manual)

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(Reviews all Land Use Applications)  
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Policy 1) Discharge at the natural location  
Policy 2) Off-site analysis  
Policy 3) Runoff Control - Superseded by Stormwater Management Manual (SWM)M  
Policy 4) Conveyance System  
Policy 5) Erosion Sediment Control Plan - Superseded by Title 10  
Policy 6) Operation and Maintenance - Superseded by SWMM

B) Discharge: Where will stormwater discharge? Will extension of public system be required?

C) Location of Facility: Is there adequate room to support the facility? Is the location appropriate for the site?

D) Type of Facility: Is the proposed facility appropriate for the conditions of the site? Is it going to be permittable? Are there additional requirements specific to area?

E) Capacity: Will the proposed stormwater management facility system be able to meet capacity requirements of the site?

Review the following:  
1) Availability of services (Review overlay maps) Is there access to necessary connections?  
2) Impervious area proposed for the site (Provided on plans) How much runoff will the site need to manage?  
3) Slopes (Review from GIS and technical investigations of the area)  
4) Soil Type (Review technical reports, may consult BDS geotechnical expertise) Are infiltration capabilities adequate? OPDR to review and approve for disposal.  
5) Ground Cover (provided on plans) What are pre-development conditions? What are impacts to natural resources in disturbance area (trees)?  
6) Development Configuration (provided on plans) What are pre-development conditions? When in or near an e-zone, is proposed configuration most protective of the site?  
7) From Stormwater manual. Are the following requirements of the manual being met?  
Facility setbacks from property lines, structures, and natural resources.  
8) Type of proposed facility (provided on plans) How much space will proposed facility need?  
9) Topography (on Overlay maps) Is facility located where it will minimize impacts and maximize effectiveness?  
10) Geologic features (overlay maps) Is the site located in area impacted by geologic features and will it require additional geo-technical investigation?  
11) Presence of Environmental Zoning (overlay maps) What are the impacts to the natural resources and will any additional permitting be required?  
12) Safety and Public Health (Requirements of stormwater manual) Is there a threat to public safety and health?  
13) Additional permit (DSL, Army Corp of Engineers, etc) Are additional permits going to be required?

Review the following:  
1) Soil Type (Review technical reports) Will the facility type be supported by the infiltration capabilities of the site?  
2) Topography (Overlay maps) Is facility located where it will minimize impacts and maximize effectiveness?  
3) Geologic Features (overlay maps) Will site require additional geo-technical analysis?  
4) Presence of Environmental Zoning (overlay maps) What are the impacts to the natural resources and will additional permitting be required?  
5) From Stormwater manual. Are the following requirements of the Manual being met?  
Sizing, Geometry, Landscaping, Setbacks, Safety and Design Features.  
6) Basin specific requirements (overlay maps)  
7) Regulatory requirement (TMDL's, ESA) Are there any requirements in the area which may impact the proposed facility type?

1) Facility Type: Will the proposed facility type have the capacity to service the site as per the requirements of the Stormwater Manual?

2) Conveyance System: Can the proposed system convey the capacity of stormwater off of the site per the Sewer Design Manual?

F) Evaluation of connections to offsite facilities

G) Coordination with other projects and city programs: Will other City projects or city programs be effected by the proposed facility?

Treatment  
Flow Control  
Infiltrating  
Disposal Facilities  
Conveyance through Facilities

Pipes  
Culverts  
Ditches  
Drainageways

Review public records: Is the capacity of off-site conveyance systems appropriate for connection? may require off-site analysis of systems (ditches, drainageways, etc.) by applicant. Applicant may need to upsize downstream facility.

Are the requirements of the stormwater manual being met?

A) Quantity of Stormwater (section 24-1) Outline stormwater capacity requirements. Analytical methods for calculating stormwater flow including rational method and unit hydrograph methods.  
B) Selection of Storm Frequency Design (Section 26-1) Importance of selecting proper storm frequency, minimum design frequencies for combined and separated systems, situations which may require use of alternate designs.  
C) Intensity of Rainfall (27-1) basis for development of design storms, design storms adopted by the city of Portland for use in specific geographic areas, appropriate charts to be used in calculating runoff rates.  
D) Time of Concentration (Section 28-1) Methods for computing, calculations used, appropriate charts and resource materials.  
E) Runoff Coefficients (Section 29-1) Runoff coefficient used in determining stormwater flows, runoff coefficients that are appropriate for actual conditions.  
F) Area of Drainage Basin (Section 30-1) Definition, methods for identifying areas, cautions against diversion of stormwater flows to other drainage basins.

Capacity Determination Methods:  
Engineering techniques/ equations detailed in the Stormwater Manual and Sewer Design Manual are used to determine whether or not the facility has adequate capacity.

Source Control: Land Use Review (LUR) Technical Decision Process for Review of Industrial and Commercial Sites

1) Review system Type:  
Is system sanitary or storm?

2) Review locations and services:  
Is the system separated, combined, private outfall?

3) Review history of property for contamination:  
How does the site check out on local and regional databases?

4) Review other city resources:  
Do other regulatory programs within the city have relevant information pertaining to site?

5) Review activities and design of the site:  
What will trigger regulatory requirements?

6) Review other issues with site:

A) Review DEQ database  
B) Review Source Control Database (City of Portland)

A) COP's Stormwater NPDES program  
B) COP's Wastewater Pretreatment program for industrial and commercial properties

A) Exposure to stormwater  
B) Source Discharge to the sanitary sewer system  
C) Source discharge to the storm sewer system (Private or Public)

A) Identify federal, state, and local permitting issues.  
B) Review stormwater manual requirements.  
C) Assess for potential issues with DEQ.  
D) City of Portland code compliance, Title 17 etc.

Watershed Planning, Land Use Review (LUR) Technical Decision Process  
(Reviews all LUR's for environmental impacts)

1) Impacts on the natural resources of the site:  
How is the proposed development going to affect the natural resources of the watershed and the specific site?

- Review the following:
- A) Wetlands (overlay maps) Is the site protective of known and suspected wetlands?
  - B) Drainageways and waterways (overlay maps) Is the development protective of drainageways?
  - C) Capacity of drainageways and waterways.
  - D) Site Location / Development configuration (on plans) Is the site designed to minimize impacts to natural resources of the site?
  - E) Vegetative Cover (on plans) What are the impacts to the trees and vegetation?
  - F) Vegetation / Mitigation plans (on plans) What types of vegetation are being proposed, and is it appropriate?
  - G) Topography (overlay maps) Is the site located where it will impact the natural resources the least?
  - H) Geologic features (overlay maps) Is the site in an area of the watershed that will need to make special considerations?
  - I) Soil Type (technical documentation reports) How will the soil impact runoff from the site and where will that runoff discharge, causing what impacts?
  - J) Facility Type (on plans) Is the facility the best choice for the site?
  - K) Bureau of Planning Natural Resource Assessments: (technical documentation) What are the defined natural resources located on the site and how are they being impacted?
  - L) Goals specific to the watershed (technical documentation) How is the watershed being impacted?
  - M) Determine if site visit is necessary. Are there questions concerning the site that require a visit?

2) Site location:  
Do special regulations exist that pertain to the site, and are other bureaus or regulations effected by the proposed land division?

- Review the following:
- A) Environmental or Open Space Zones (Overlay maps) Is any portion of the site in one of these zones and will the resources of the site be impacted?
  - B) Planning Districts (Overlay maps) What special regulations are tied to the district?
  - C) Greenways or other specially zoned areas (Overlay maps) What special regulations are tied to the district?
  - D) NRMP (Natural Resource Management Plan) Is the location the best place for the facility on the site?
  - E) Urban Conditions (overlay maps) what is the proximity of the site to areas of high density, major transportation corridors, etc.?
- Review and/or consult:
- F) ESA Group (Endangered Species Act) What are the impacts to endangered species in the watershed such as coho and chinook salmon?
  - G) Re-Vegetation Group. Are we promoting the appropriate vegetation for the site location in the watershed?
  - H) TMDLs (Total Maximum Daily Loads) Implemented by DEQ. Are we impacting requirements of the state?
  - I) FEMA (Federal Emergency Management Agency) Are there impacts to the floodplain and how is it effecting potential flooding issues?  
CRS (community rating system) Are there impacts to potential flooding?
  - K) COE and DSL (Corp of Engineers and Division of State lands) Are there any wetlands on the site? Will additional permits be required?
  - L) OSD (Office of Sustainability) Is the site a good prospect for using sustainable methods?
  - M) Other Jurisdictions: Are there any other groups who would have interest in activities on this site.

3) Site History (when appropriate):  
Does a masterplan or conditions of approval exist from a previous LUR?