DESIGN CRITERIA MANUAL

CHAPTER 3 LANDSCAPE

MUNICIPALITY OF ANCHORAGE

PROJECT MANAGEMENT & ENGINEERING DEPARTMENT

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DESIGN CRITERIA MANUAL
REVISION LOG

Chapter 3 – Landscape

Rev. No.	Date Executed	Description	Sections Revised or Added	New/*Revised* Template

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FIGURES

ACRONYMS AND ABBREVIATIONS

AASHTO.....American Association of State Highway and Transportation Officials
ANSI A300.....American National Standard for Tree Care Operations
ANSI Z60.2.....American National Standard for Nursery Stock
AMATS.....Anchorage Metropolitan Transportation Solutions
AMC.....Anchorage Municipal Code
CPTED.....crime prevention through environmental design
CBD.....central business district
DBH.....diameter at breast height
M.A.S.S.....Municipality of Anchorage Standard Specifications
OS & HP.....Official Streets and Highways Plan
P&Z…….Planning and Zoning Commission
ROW.....right-of-way
TPZ……tree protection zone
UDC……Urban Design Commission

SECTION 3.1 PROJECT PLANNING

3.1 A Objectives

This chapter of the Design Criteria Manual (DCM) provides comprehensive guidance and criteria for landscape design, installation, and maintenance of projects within the public right-of-way (ROW) and in public open spaces such as parks in the Municipality of Anchorage. As Alaska's largest city, Anchorage recognizes the importance of urban design, and the need to maintain high standards. Design should balance aesthetic appeal, functionality, maintenance, stewardship, and community needs. Streetscape improvements are significant tools that provide the community with a strong connection to the magnificent natural setting that surrounds Anchorage.

This chapter's goals are to:

- improve safety within public spaces
- maximize functionality
- provide durable and maintainable landscapes

This chapter serves as one of several adopted or referenced resources used to inform and guide municipal projects (see Section 3.2 and end of this chapter for references). Together, these documents ensure that landscapes contribute to Anchorage's built and natural environments by creating a cohesive approach to landscape design that reflects community values, enhances public spaces, and supports Anchorage's long-term goals.

Landscape improvements for municipal projects may include:

- Plantings: All plant material, including turf, selected for resilience, ecological benefits, and aesthetics.
- Pedestrian Amenities: Seating, trash receptacles, and lighting that enhance comfort, safety, and usability.
- Hardscape Features: Paved pathways, walls, and other hardscape elements that contribute to accessibility and define outdoor spaces.
- Art and Cultural Elements: Public art installations, interpretive signage, and decorative features that reflect Anchorage and Alaska's cultural heritage.

Landscape architects are licensed professionals trained to design public spaces, including roadway improvements, to create functional, aesthetically pleasing spaces that balance available resources. In addition to landscape architects, other professionals may be required depending on the proposed project. Certified arborists are trained to understand tree health, retention, and preservation. Electrical engineers ensure landscaped spaces have adequate lighting. Civil engineers work closely with landscape architects to ensure effective stormwater management, grading and drainage, utilities, and other infrastructure features.

3.1 B Decision-Making

Landscape improvements vary project-by-project. Factors such as ROW limits and project budgets affect the type and level of landscape design. A project's role within the greater community context should also be considered when determining the level of landscape desired, which is often determined or guided in the municipal comprehensive plan, neighborhood plan, or other adopted plan. It is the role of the landscape architect to work closely with the community, the design team, and other members of PM&E to determine specific landscape improvements. Thus, it is important for the landscape architect to be included in the initial project planning phases and to aid in developing options. If there is a conflict with a project meeting design criterion, a design variance may be possible, see DCM 3.1 C. The following goals and methods should be considered when evaluating landscape improvements for a project:

Promote Safety:

Landscapes should support safety in public and private areas by minimizing hazards for pedestrians, reducing vehicle speeds through traffic calming design, and supporting visibility and security.

- Follow Crime Prevention Through Environmental Design (CPTED) principles to discourage crime and enhance visibility.
    - Ensure that landscapes allow and support clear sight lines, well-maintained pathways, and strategic placement of site amenities (e.g., lighting and seating). Generally, street plantings should allow for clear sight lines between 30" and 80" above finish grade.
    - Use plantings, decorative elements, and signage to help visitors recognize it as a valued public space and discourage misuse.
- Use methods to support traffic calming and make the streets safer for all users in accordance with transportation plans such as planting trees along roads to slow drivers by creating vertical elements that make lanes feel narrower.
- Use pedestrian amenities and plantings to define pedestrian spaces from vehicular spaces to reduce conflicts.
- Provide clear and intuitive wayfinding to minimize confusion and reduce distractions. Wayfinding includes signage, amenities, and landscape features, which contribute to place making and space delineation.
- Lighting is critical to safety for pedestrians, bikers, and drivers, especially during our long winter nights. Landscaping should enhance, or at least not impede, street lighting while recognizing the issues created by light pollution, including glare.
- Landscapes should be designed so they are easy to maintain for safety, especially in winter. This includes reducing tripping hazards and providing clear areas that allow snow clearing machinery easy access.

Improve Function:

Thoughtfully designed landscapes can provide numerous functions including storm water management, improved streetscapes that better separate vehicles from non-motorized spaces, improve air quality, control wind and snow drift, and provide visual cues for drivers.

- Integrate features that support diverse user needs, so all members of the Anchorage community and visitors can use the facilities, regardless of age, ability, or cultural background.
- Design streetscapes that increase ecological function, promote sustainability, and are resilient to climate change impacts.
    - Prioritize sustainable practices and low-impact development (LID) (see glossary) such as native plantings to improve ecosystem health and reduce heat island effects. Integrate stormwater management strategies from DCM Chapter 2, such as bioretention facilities and vegetated swales, to reduce runoff and improve stormwater capacity and water quality.
    - Design green corridors, such as tree-lined streets or connected park systems, to provide continuous habitat for wildlife and improve ecosystem connectivity.
    - Enhance the pedestrian experience which has been shown to positively impact commerce and economic development.
    - Street trees can add 3% to sales price and reduce time-on market by 1.7 days for residential areas (Donovan and Butry, 2010).
    - In retail areas with high quality tree canopy, surveys indicate consumers are willing to spend 9% to 12% more on goods and services (Wolf, 2005) (Wolf, 2014).
- Enrich the pedestrian experience which improves community health and well-being. Creating spaces that people care about also fosters a sense of stewardship, which will in turn help keep streets safer and cleaner.
    - High percentage of tree cover was associated with lower prevalence of diabetes, hypertension, and cardiovascular diseases when adjusting for socio-economic factors for residents (Astell-Burt and Feng, 2020)
    - Children living in areas with street trees achieved more positive early childhood development outcomes such as cognitive development, physical health, and social competence. (Jarvis et al., 2022)
- Use place-based design principles to reflect the natural landscape and its cultural significance, recognize the history and traditions of Indigenous communities, and incorporate traditional patterns, materials, and spatial arrangements.
- Buffer users from inclement weather or environmental conditions to provide a more comfortable experience.
- Ensure landscape supports effective drainage by avoiding obstruction of water flow and incorporating elements that facilitate proper runoff and storage/infiltration and prevent undesirable water accumulation

Durability:

Provide a framework for proper maintenance and care of plantings for sustainable, long-term landscapes that enhance quality of life. Design plantings that align with responsible snow removal and storage practices that are safe, efficient, and recognize limited municipal resources.

- Minimize long-term maintenance needs by using drought-tolerant and native or climate-adapted species. Other maintenance needs, such as pruning, should also be weighed when selecting plants.
- Consider raised planter beds, raised curbs, or other solutions that protect plant material from snow clearing and storage, as well as collection of gravel and sediment from cleaning operations.

- Specify high quality materials grown by professional nurseries that meet American Standard for Nursery Stock ANSI A300.
- Inspect plant materials prior to transportation to site if possible and during planting operations and reject all unsuitable materials. Inspection must take place no later than delivery to site per M.A.S.S.

3.1 C Design Variances

This manual presents the minimum requirements for landscape. Whether expressly stated or not, throughout the criteria, any deviation from these standards in which the minimum requirements are not met shall require a written variance from the Municipal Engineer. A variance is not required for deviations in which these minimum requirements are exceeded. Approval of plans containing deviations from the criteria shall not constitute tacit approval of the deviation or approval of a design variance. The variance application request process is as follows:

- Request Submittal: Variance requests shall be in writing and shall contain information, justification, and suggested resolutions. Variances shall be approved prior to submittal of applicable plans and/or reports.
- Documentation: Variance requests shall include complete discussion and documentation supporting proposed methods and parameters. Documentation must include citations of current research and manuals of practice published or sponsored by well-known, credible public and private agencies. Complete copies of supporting documentation must be provided as part of the application. Economic hardship shall not be adequate justification for a variance.
- Justification: Variance requests shall include compelling technical arguments for using the proposed method or parameter as an alternate to what is stated within this chapter of the Design Criteria Manual.
- Review: The Municipal Engineer will consider variance requests and accept or deny the request in writing. Appeal of decisions regarding variances shall follow the procedures detailed on the Municipality of Anchorage website in Policy and Procedures Number 10, “Contesting and Appealing Decisions” (found at www.muni.org).

3.1 D Integrated Decision-Making Framework

Achieving these objectives requires a collaborative and integrated approach to planning and design. The following steps provide opportunities throughout the design process to help landscape architects, project managers, and community stakeholders navigate projects:

Collaborative Planning:

- Involve key stakeholders early, including community members and other professionals, to ensure a shared vision and to identify community priorities. Each district and neighborhood in Anchorage has a unique identity and issues that should be addressed within the project. Use an integrated approach to design and engineering by including landscape architects, arborists, and horticulture specialists in initial project planning phases.

- Conduct initial site assessments to determine the need for specialists including arborists, urban foresters, maintenance managers, horticulture, environmental/habitat and wetlands experts.
- Consider community feedback and conduct public involvement meetings to understand specific needs, concerns, and aspirations for each project.

END OF SECTION 3.1

SECTION 3.2 LANDSCAPE CODES, POLICIES AND REVIEW PROCESSES

3.2 A Reference Plans

Designers, planners, and project managers should reference this chapter in conjunction with the following resources:

- **Anchorage Municipal Code (AMC) Title 21:** Comprehensive zoning and land use regulations, including specific landscaping requirements for various project types.
- **Official Streets and Highways Plan**: Offers a way for the community to plan for future growth by determining the location, classification, and minimum ROW of streets and highways necessary to meet the transportation needs of the community in the future. Additionally, it provides goals for ROW landscaping for each street classification.
- **Municipality of Anchorage Standard Specifications (M.A.S.S.):** Technical standards for materials and construction methods essential for implementing municipal projects.
- **Current Anchorage Land Use and Comprehensive Plan:** Guides development across Anchorage and emphasizes the importance of sustainable landscapes, ecological connectivity, and climate resilience in all public spaces.
- **Anchorage Stormwater Manual (Volume 1&2):** Criteria for integrating landscape elements into stormwater management systems to improve water quality and reduce runoff. This manual is Chapter 2 of the Design Criteria Manual.
- **Anchorage Non-Motorized Plan:** Strategies to enhance walkability, ensure pedestrian safety, and integrate accessible pathways into urban landscapes.
- **Vision Zero Action Plan:** A framework to eliminate traffic-related fatalities and serious injuries, emphasizing safe and effective landscape designs.
- **AMATS Complete Streets Policy:** This policy guides the future design approach for AMATS projects and includes information on creating streets that accommodate all users, including pedestrians, cyclists, and vehicles and can provide valuable context and strategies for similar municipal projects.
- **Context-Sensitive Solutions (CSS):** Approach to designing landscapes that reflects the unique character, history, and needs of Anchorage neighborhoods, as well as the public-involvement process. It emphasizes flexible design solutions, collaborative decision-making, community input, and environmental stewardship.

3.2 B Anchorage Municipal Code (AMC)

Note: As our community's needs change, the Anchorage Municipal Code is updated. Always refer to the most recently adopted codes on the municipal Planning Department website or contact the department directly.

Anchorage Municipal Code (AMC) outlines specific landscape requirements and design standards across various zoning districts and use types. These are primarily applied to private site development, not within the ROW. Below are the primary code sections most relevant to municipal landscape projects:

AMC 7.40: Funds for works of art in public facilities

AMC 21.04: General landscape requirements by zoning district.

AMC 21.07.080: Landscaping, Screening, and Fences

AMC 21.07.080C: When the sum of the required perimeter and parking lot landscaping is greater than 1,000 square feet, a landscape plan must be prepared by a licensed landscape architect registered by the State of Alaska consistent with AS 08.48 and 12 AAC36.

AMC 21.03.190: Street and Trail Review requires that the Planning & Zoning Commission (P&Z) and Urban Design Commission (UDC) review and make recommendations on public facilities, including streets of collector or higher designation in the Official Streets and Highways Plan (OS & HP).

AMC 21.11.070: Downtown Development and Design Standards

Planning and Zoning Commission Authority

AMC 21.02.030: Review and make recommendations to the assembly regarding public facility site selection for municipal facilities (21.03.140).

AMC 21.02.030: The planning and zoning commission has decision-making authority over the draft design study reports for new construction and reconstruction of streets of collector class or greater in the OS & HP (21.03.190).

AMC 21.02.030B: Plans subject to review by P&Z, including site design, landscape, and structural design. P&Z may delegate the authority to review and approve plans to the UDC.

Urban Design Commission Authority

AMC 21.02.040A.4: Reviews Plans-in-Hand (PIH) preliminary design drawings for new construction and reconstruction of streets of collector classification or greater on the Official Streets and Highways Plan (21.03.190).

Municipal Policies and Standards

AMC 21.01.080: Comprehensive Plan identifies rules and policies that govern land use development throughout the Municipality on both public and private lands.

Anchorage's comprehensive planning policies and standards reinforce landscape goals that align with community values, environmental priorities, and aesthetic objectives. Some of the plans applicable to public facility projects include the Areawide Trails Plan, Our Downtown Plan, Turnagain Arm Comprehensive Plan, the Girdwood Area Plan, the Chugiak-Eagle River Comprehensive Plan, and the Street and Highway Landscape Plan. Many community councils have their own MOA approved neighborhood plans.

3.2 C Landscape Review Process Overview

Municipal landscape projects may undergo a multi-step review process involving the Planning Department, Planning & Zoning Commission, and Urban Design Commission. Each application requires a minimum of two months of review prior to the date of the public hearing (if required). Below is a list of typical components for street and site plan reviews:

- **Pre-application Conference**: Initial discussion to align project objectives with municipal standards. This should be done as early in the concept phase as possible.
- **Conceptual Review** (optional for major projects): Early feedback on preliminary street and landscape design.
- **Formal Application Submittal**: Submission of final design plans and compliance documentation.
- **Public Notification and Comment Period**: Opportunity for residents to provide input and feedback.
- **Departmental Review**: Internal review of landscape plans for code compliance.
- **Commission Review and Approval**: Final review by the PZC or UDC, potentially including a public hearing.

For information about specific project reviews please refer to the associated codes and departments:

AMC 21.03.190B.2: Street Reviews

AMC 21.03.190C.3: Trail Reviews

AMC 21.03.180: Site Plan Reviews

Site plans will either require an Administrative Site Plan Review or Major Site Plan Review as identified in:

- AMC 21.05 for Anchorage Table of Allowed Uses
- AMC 21.09 for Girdwood Table of Allowed Uses
- AMC 21.10 for Chugiak-Eagle River Table of Allowed Uses

- AMC 21.11 for Downtown Districts Table of Allowed Uses

3.2 D Order of Reviews and Public Outreach

Anchorage Municipal Code Title 21 requires Municipal review of public improvement projects for consistency with the Comprehensive Plan and other requirements of code. The Planning Department oversees the review process for plans for public facilities and streets.

Street projects should comply with the Street and Trail Review process per AMC 21.03.190 for public engagement which includes:

- **Project Scoping**: Feedback is used to define project goals, identify community priorities, and highlight potential issues. This may include outreach such as public meetings, newsletters, and a Citizens' Advisor Committee.
- **Alternatives Development**: A full range of alternative and understandable solutions must be presented for the public to review and offer feedback.

END OF SECTION 3.2

SECTION 3.3 GENERAL GUIDELINES FOR LANDSCAPE INSTALLATION AND MAINTENANCE

3.3 A Preservation and Protection of Existing Vegetation

Perform site inventory and analysis early in the design process to determine the value of existing vegetation and the presence of any invasive species. Where practical, existing trees, forested areas, and wetlands should be preserved; efforts should be made to retain healthy trees and vegetation that have special character due to size, age, habit, wind breaks, screening or buffering adjacent properties, or have other ecological benefits.

Existing vegetation can reduce erosion, slow water run-off, reduce urban heat island effects, and maintain air quality. Preserving the urban tree canopy also improves residents' mental health and well-being, thus benefiting the larger community (Alcock, et al., 2014). Another benefit of retaining existing vegetation is the savings in construction costs by reducing the need to remove, transplant or replace trees. Negative aesthetic impacts created by new construction can stall or delay projects and raise public concern. Preserving existing vegetation also protects soils that support vegetation and provide critical green infrastructure. Identifying invasive species and developing mitigation plans can help to protect native vegetation and soil. These benefits are crucial to create and maintain durable, highly functioning, and resilient landscapes.

The contract documents should clearly denote areas to be protected and the best methods for that protection. The following measures should be taken to best preserve the existing vegetation on site:

Early Site Assessment:

The preliminary design phase is a critical period in the design process to protect existing vegetation. During this time, a landscape architect should work with allied professionals such as a certified arborist or a horticultural specialist to assess and document the age, health, and ecological value of existing trees and vegetation to identify which should be preserved. Priority should be given to retaining vegetation with significant size, habitat value, or those providing erosion control, screening, or other important contributions to the site. Invasive species should be identified for removal to limit spread and impact on the plant community in the project and surrounding area. In the case of invasive species removal, it may be necessary to coordinate with an invasive species management specialist, as some species require specific treatment to limit spread.

Landscape architects are trained to understand the overall site, including screening or similar public concerns regarding landscaping. Arborists assist landscape architects and other allied professionals in establishing a Tree Protection Zone (TPZ) in accordance with ANSI A300 and MASS Division 75. Refer to MASS Division 75, Article 2 Construction, D. as well as Section 75.13 Root Pruning and 75.14 Tree Protection Zone Fence for detailed information on tree protection.

Plan documents should show the areas for preservation including the configuration and area occupied by crown/canopy of the trees that are to be retained. Documents should also show protective fencing per Anchorage's M.A.S.S., Section 75.14 & the associated M.A.S.S. detail 75-10 to keep construction

equipment and materials out of the TPZ. Root pruning per M.A.S.S. Section 75.13 and soil aeration may be used as additional preservation measures where necessary

Wetland Protection:

Wetlands provide critical habitat and ecological functions that make them vital to Anchorage's ecosystem. Anchorage has mapped and catalogued its wetlands, see Wetlands Management Plan and Wetland Designation Map in Section 3.9 References. For this reason, there are many protections and regulations for any project that occurs within them. For information about permitting of wetland projects, refer to the Anchorage Stormwater Manual (Volume 1&2), contact the U.S. Army Corps of Engineers, MOA Watershed Management Services, or Planning Department. Include timing for permitting in the schedule and budget additional funds for mitigation costs. It is critical to preserve wetlands and their ecosystem services to align with this chapter's goals of sustainable urban design.

3.3 B Best Practices for Growth and Minimizing Maintenance in New Plantings

1. Planting Bed Sizes, Shapes, and Location

Proper soil volume (see recommendations below) reduces maintenance, improves safety and plant resiliency providing healthier, more attractive, long-lived vegetation that absorbs more water, reduces noise pollution, and improves community spaces. Providing for bigger tree growth provides more ecosystem services including stormwater mitigation and air quality improvements. It can take a few years after being planted for a 2" caliper tree to provide ecosystem services. Planting soil meeting M.A.S.S. (unless modification is specifically needed) should be provided to meet or exceed the minimum depth. Most roots remain in the top 24 inches of soil, the lateral root spread grows significantly with increasing Diameter at Breast Height (DBH). Thus, when narrow strips of tree plantings are required due to limited ROW, roots are forced to grow in one or two directions only, limiting the lateral stability of the trees. Utilizing structural soils that can handle compaction to provide more macropores for root growth can promote lateral stability.

Certain projects, such as along trails and in parks, offer the opportunity to use existing soils which can minimize costs, promote the establishment of native plant species, and mitigate the risk of introducing invasive species that may accompany imported topsoil.

All planting beds shall have a minimum of 12 inches per M.A.S.S. Section 75.03; however, most landscape beds with trees and shrubs call for at least 18 inches of planting soil depth. Importantly, the soil shall meet requirements as determined by soil tests in accordance with M.A.S.S. Section 75.03. If using salvaged soils, the soil test will provide information as to the need for additional minerals or organics.

- **Tree Planting Bed Size and Shape:**
    - Tree soil volume requirements should be estimated based on DBH, which is generally a more reliable indicator than tree height.
    - The planting bed should provide a minimum 18-inch depth of planting soil to a maximum depth of two feet for tree root development, depending on species and size. Depths greater than this seldom provide for additional root development due to low soil temperatures and available oxygen. Where planting bed width is limited, adequate soil

volume, as described below, is still recommended and may be accommodated through creative planting layout.
    - Massing the vegetation tends to provide increased survivability of plant materials and helps to reduce maintenance.
- **Soil Volume Recommendations for Trees Based on mature DBH:**
    - These guidelines offer the minimum ideal soil volumes needed to support robust root development:

DBH:	Soil Volume:
4–8 inches	400–600 cubic feet
8–12 inches	800–1,200 cubic feet
12–18 inches	1,500–2,000 cubic feet
18–24 inches	2,500–3,000 cubic feet
24+ inches	3,000+ cubic feet

    - Plant material should be inspected by a landscape architect or horticulturalist before arriving at the project site to verify compliance with M.A.S.S., ANSI Z60.2, and ANSI A300. This includes checking the plants' health and size and verifying plants are pest, disease, and injury free. This review ensures plants arrive in optimal condition and have the greatest likelihood of properly establishing.

2. Clustering Plantings Along Roadways

Clustering plantings along roadways may reduce damage from snow removal operations and enhance aesthetic characteristics. Grouping trees and shrubs in planting beds rather than dispersing them evenly along the roadway can minimize conflicts with plowing and snow storage while increasing efficiency of maintenance (Figure 3-1). The dimensions shown in the Figure below (Figure 3-1) align with recommendations from MOA street maintenance and can vary by street size provided projects conform to the maximum and minimum dimensions shown in the figure. These recommendations were developed using precedents such as Elmore Road, which demonstrates a successful example of street amenities and plantings being consolidated for efficient snow clearing and a sufficient room for snow storage. Indeed, adequate spacing of planting beds provides area to accommodate snow storage, ensuring that plants are not buried or damaged by snow clearing equipment. While specific dimensions will vary depending on site conditions, right-of-way width, and maintenance requirements, designs should balance aesthetic appeal with functionality, allowing for safe and efficient roadway operations throughout the year. Consolidating light fixtures and planting clusters may further assist snow maintenance procedures.

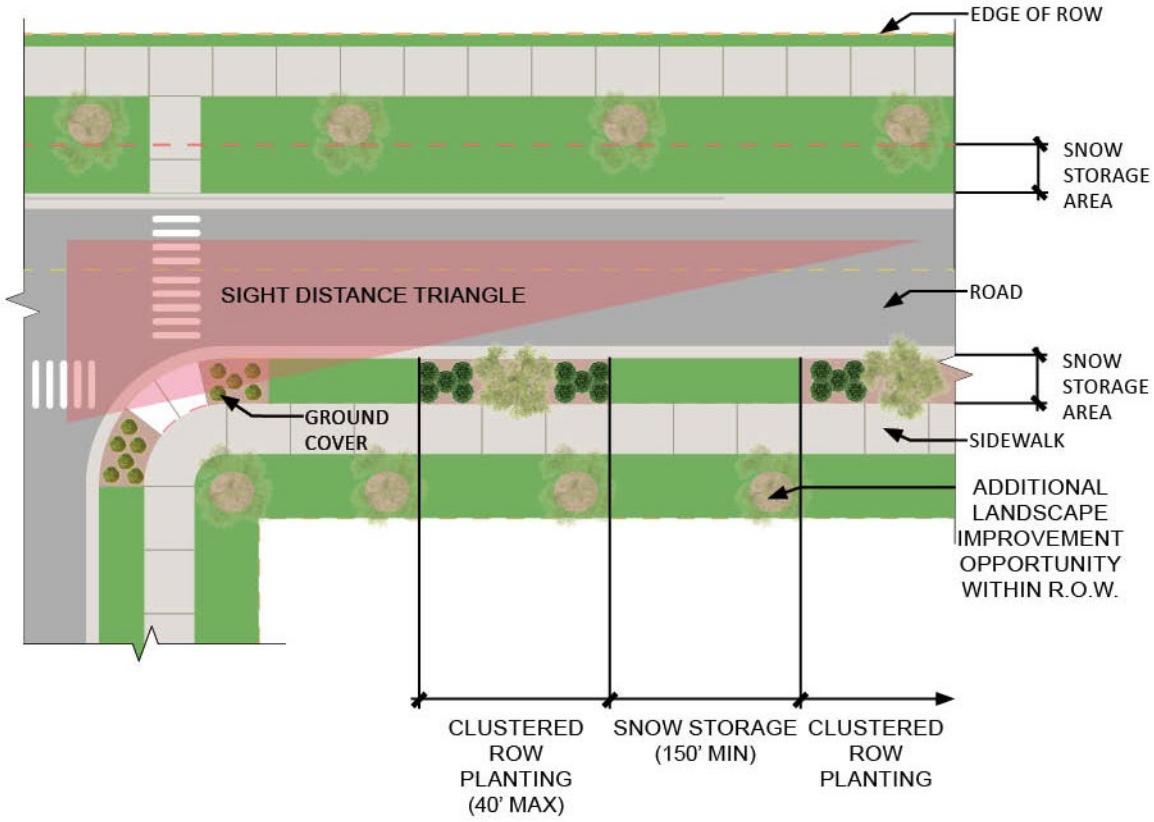

Figure 3 - 1: Clustered Plantings

3. Planting Installation Details

Planting installation shall be per specifications and details found in M.A.S.S. Division 75 as well as its applicable standards in ANSI A300 and ANSI Z60.2.

Trees and planting beds within the right-of-way and along roadways pose challenges to plant survival because of the drier conditions, soil compaction, maintenance demands, and other elements typical to urban areas. The details will often show the planting soil brought to the site because the native soil had been removed during construction.

Watering Rings:

Trees in lawn areas suffer injury from lack of water, mowing equipment, and string trimmers. New plantings in lawn areas should be established with a well-defined temporary watering saucer, as shown in M.A.S.S. details 75-2, and 75-3, to allow the plant to grow free from grass for 2 to 3 years and provide easy mowing.

Moose Browse:

Another consideration for planting details is the potential for moose-browse. In many locations, it is an issue, resulting in the damage or death of plants. Designers should provide moose protection fencing

according to M.A.S.S. Detail 75-11. Fencing should be removed after the maintenance period or once the tree has reached sufficient size to withstand the occasional moose-browse.

Staking:

Staking is generally not considered best practice because it can hamper optimal tree growth and, if left unattended, can result in significant damage including scrapped bark and trunk girdling. It should be reserved for areas where there is high wind, a strong chance of third-party damage, or if trees come as "bare root" stock. If used, stakes must be checked regularly for any damage and removed after the maintenance period.

Tree Guards:

Tree guards are protective barriers or enclosures placed around the base of young or vulnerable trees. Their primary purpose is to shield the trunk of the tree from potential damage caused by mechanical equipment, animals, environmental factors (e.g., wind, ice), and human activity. While this can provide a temporary benefit to young trees, it can also be a source of damage when not adequately maintained as it can constrain the branches and trunks if they grow beyond the guard. Tree guards should only be used when mechanical injury of some type is expected, when on-going maintenance is assured, or where large concentrations of people are expected to gather.

4. Maintenance Practices and Long-Term Care

To ensure project success, landscaping design shall be coordinated with the agency that will provide long-term maintenance to ensure the needs of the landscaping do not exceed the resources of the agency. If the landscaping is located within a municipal ROW, the MOA is responsible for maintenance. Landscaping that is installed in the ROW without a long-term maintenance plan may struggle to thrive and ultimately may be replaced by pavement or topsoil and seed, even if the plantings were still productive by providing infiltration, particle absorption, etc. It is important for plantings to be designed to be durable and long-lasting like other parts of the streetscape. Long-term maintenance may be provided by a non-profit, such as the Anchorage Downtown Partnership, or by a municipal department such as Parks & Recreation. Given the challenges of long-term maintenance, plants will need to be chosen based on their ability to survive without varying levels of maintenance. Depending on site conditions, it may be pertinent to cluster plantings rather than continuous, linear landscaping installations, as concentrated plantings tend to be easier to maintain. Designers shall consider long-term maintenance requirements when determining the size and concentration of plantings along a road.

The short-term maintenance of plantings is described in M.A.S.S. 75.02 Article 2.4. The Plant Establishment Period is generally one year long but can be extended with permission from the Engineer. Following the Plant Establishment Period, the practices and protections below should be applied, when appropriate, to improve the success rate of establishment:

Inspection and Replacement:

- Inspect new plantings regularly during the first two to three years. Replace any failed plants promptly to maintain landscape integrity.
- Adhere to standards from ANSI Z60.1 and ANSI A300 to ensure quality and consistency of replacement plant materials.

Weed and Pest Control:

- Use an Integrated Pest Management program, which can include biological, cultural, mechanical, and/or chemical controls, for the least-toxic option for weed and pest control to minimize chemical exposure and protect Anchorage's water quality.
- All beds should be weed free, and weeding shall be a routine maintenance activity.

5. Urban Tree Health Design Considerations

Trees and other vegetation in urban areas must withstand harsh growing conditions with numerous stress factors such as salt, compacted soils, and pollution. Furthermore, trees in urban areas need to have a mature branching height of 80" to accommodate ADA and create comfortable pedestrian areas. Intersections require clear vision areas (site triangles) that limit both tree and shrub plantings to allow visibility. The clear vision area is defined in AMC 21.45.020.

Soil vaults, structural soil, and suspended sidewalks are three design options when planting trees in dense urban areas where trees are under more stress from compaction and seasonal use of salts.

Tree Vault/Modular Pavement Support System:

Tree vaults or modular pavement support systems are an ideal solution for promoting tree health and stormwater management in densely built urban environments where soil space is limited and adequate funding is available. These systems provide a greater volume of nutrient rich, uncompacted soil while supporting vehicle loads, and capturing stormwater. Many systems are available commercially and have been approved for use by transportation officials.

Suspended Sidewalks and Structural Soil:

Structural soil and suspended sidewalks can be used to provide an adequate zone for healthy root development by increasing the quantity of soil available to the trees underneath the sidewalk. Suspended concrete spans the planting soil, allowing the needed cubic footage of planting mix while permitting pedestrians to walk above. The bed should be designed to ensure that salt-laden runoff is not concentrated in the pit and requires a way to allow air circulation around the roots. Structural soil, whether used for suspended sidewalks or not, can also be used to create a stable sidewalk base and expand the soil volume for rooting. Supportive aggregate occupies some of the space that would be available for roots increasing soil volume.

Raised Plantings:

Raised planters and raised curbs can protect plants by elevating them above the ground surface, reducing the potential input of contaminants such as deicing salts, and protecting plants from maintenance damage. Additionally, planter walls absorb warmth from the sun to elevate soil temperatures during the day, which is especially valuable in the spring. Adequate soil volume is still necessary for optimal tree health and to insulate roots to prevent freezing and subsequent damage. Adding insulation to raised planters also reduces the risk of winter damage due to freezing and freeze/thaw conditions. Finally, planting plants that are rated one zone below the site's hardiness zone may reduce plant stress in raised beds.

Generally, raised planters should have a total minimum height of 12" above finish grade to prevent tripping and damage from snow clearing operations. Decorative features such as railings, can be used to meet the 12" height above finish grade.

Tree Grates:
Tree grates allow air circulation and water to enter the root zone while providing a safe walking surface for pedestrians. Tree grates should meet current accessibility standards and be specified to ensure that tripping hazards do not occur. The tree grate opening should be designed to accommodate trunk flare diameter and must be regularly inspected and adjusted to ensure there is no contact between the grate and the trunk. Tree grates can incorporate decorative elements that enhance their surroundings and enrich the neighborhood's unique design identity.

6. Stormwater Management/Green Infrastructure

Several road typologies offer an opportunity for on-site water treatment and should be incorporated into landscape design. Vegetated swales, biofiltration systems, infiltration basins, and other green infrastructure systems are ideal ways to establish landscapes that can mitigate and enhance stormwater management. Interconnected stormwater systems work with the natural landscape, creating highly productive, diverse ecosystems with significant habitat values while creating safer streets by reducing the risk of flooding and other hazards on roadways.

Landscape projects are site specific, and their success heavily relies on the thorough study and careful design of the pre-construction hydrology, topography, and soils. For information on selecting and installing urban green infrastructure recommended by the municipality, please refer to DCM Chapter 2.

The design of green infrastructure systems requires an interdisciplinary team composed of civil engineers, hydrologists, arborists, and landscape architects. Based on the complexity and the number of variables present, other professionals and scientists may be valuable resources.

Grading and seeding are the most common landscape methods for the treatment of drainage areas. Landscape architects should work closely with the civil engineers to ensure slopes and plantings prevent soil erosion and understand depth and duration of standing water. Using a variety of seed mixes to accommodate the changes in hydrology is the best way to ensure proper coverage for the project. The use of herbaceous plants is beneficial in areas that will be inundated throughout most of the growing season. Specific seed mixes and woody plant recommendations which are suitable and desired are provided in DCM Chapter 2 as well as M.A.S.S.

Phytoremediation uses plants to clean environmental pollutants in the soil, water, and air. Specific types of plants offer different phytoremediation capabilities; each site and situation must be considered individually depending on desired outcomes. Anchorage has a wide array of woody and herbaceous plant species that thrive under wet conditions in poorly drained, cold, and acidic soils, thus research into which plant species are right for the site and remediation goals should be part of the design process.

Sometimes donor sites may be found that offer prime material for salvaging operations. The salvaging and transplanting of this material may sometimes be done in winter because of the relative ease of site access by equipment and the reduced damage to the frozen root mass and snow-protected branch structure.

7. Planning for Snow Clearing and Storage

Snow storage along a road may occur in buffers between vehicle lanes and pedestrian facilities, in areas beyond pedestrian facilities where those facilities lack buffers from vehicle lanes, or in the area immediately adjacent to a roadside when pedestrian facilities are not present. These areas are covered by snow and ice for extended periods during the winter. When snow accumulation exceeds the space

available in the snow storage area, equipment such as road graders or snow blowers are used to remove snow from these areas. Along Collector and Arterial streets, significant accumulation of road debris, including gravel used to increase traction in icy conditions, can build up in these areas. Summer maintenance of these areas often includes sweeping mechanical brooms to remove accumulated gravels.

Snow storage areas should be excavated and re-graded periodically to mitigate excess accumulation or road debris that can degrade the landscaping in these areas and block drainage paths. Plantings in these areas should be easily replaced and be cost-sensitive. The excavation and re-grading should be included in Capital projects such as pavement preservation projects whenever possible.

Effective snow management is essential in municipal projects to ensure safety, functionality, and the preservation of landscaped areas. Due to Anchorage's conditions as a winter city, it is vital that landscapes support efficient snow clearing and storage practices. Proper planning and implementation minimize damage to infrastructure and vegetation which increases safety by minimizing hazards. Follow these principles:

Plan for Snow Storage:

- Designate specific snow storage areas during the project planning phase, ensuring they are large enough to accommodate typical snowfall volumes per AMC 21.07.040F.
- Locate storage areas away from sensitive landscapes, pedestrian pathways, pedestrian amenities, and drainage systems to reduce the risk of damage, flooding, and pollution.
- Consider using hardy, salt-tolerant plant species near high-traffic or snow storage zones. Plants with flexible branching are also less subject to breakage, and therefore, more resilient in these areas.

Understand Snow Removal Techniques:

- Learn what equipment the client will use, ideally it will minimize impact on pavement and landscape features, such as rubber-edged blades or snow blowers.
- Design landscapes to accommodate the equipment, including the turning radius of machinery. Tree branching should not impede snow clearing, and shrubs/perennials should have a form which will not spread into the sidewalk clear space.
- Train operators to avoid piling snow against tree trunks, shrubs, or landscape structures. Update them about new landscape installations, so they are aware of changes and may operate accordingly.

Mitigate Salt and De-Icer Impact:

- Understand the use of salt and de-icing products near landscaped areas and consider vegetated filtering methods and plants that are tolerant of these products.
- Include measures to direct salt and de-icing runoff away from plant beds and into appropriate drainage systems, unless green infrastructure is being used.

Integrate Design Solutions for Durability:

- Incorporate permeable materials in designated snow storage areas to facilitate drainage and reduce ice buildup.

- Design hardscapes and pathways to accommodate snow-clearing equipment without damaging edges or adjoining landscapes.
- Use raised planting beds, when possible, to protect planting material from snow clearing operations.
- Consider snowmelt systems on sidewalks where pedestrian use is highest.
- With proper planning and thoughtful design, snow clearing and storage practices can protect municipal investments while maintaining accessibility and safety throughout the winter season.

Woody plant material in snow storage areas adjacent to sidewalks and streets often suffers damage during winter. Where cluster plantings are proposed, woody plant material should be two feet from back-of-curb and are allowed outside of snow storage areas in non-clustered plantings. In addition, where space is available, a two-foot accent concrete apron may be installed adjacent to curbs to reduce maintenance and improve the appearance of the street landscape (Figure 3-2). While grass is typically used in snow storage areas, perennials, and/or other herbaceous plants should be considered in lieu of grass in locations where plow damage will not remove herbaceous root stock.

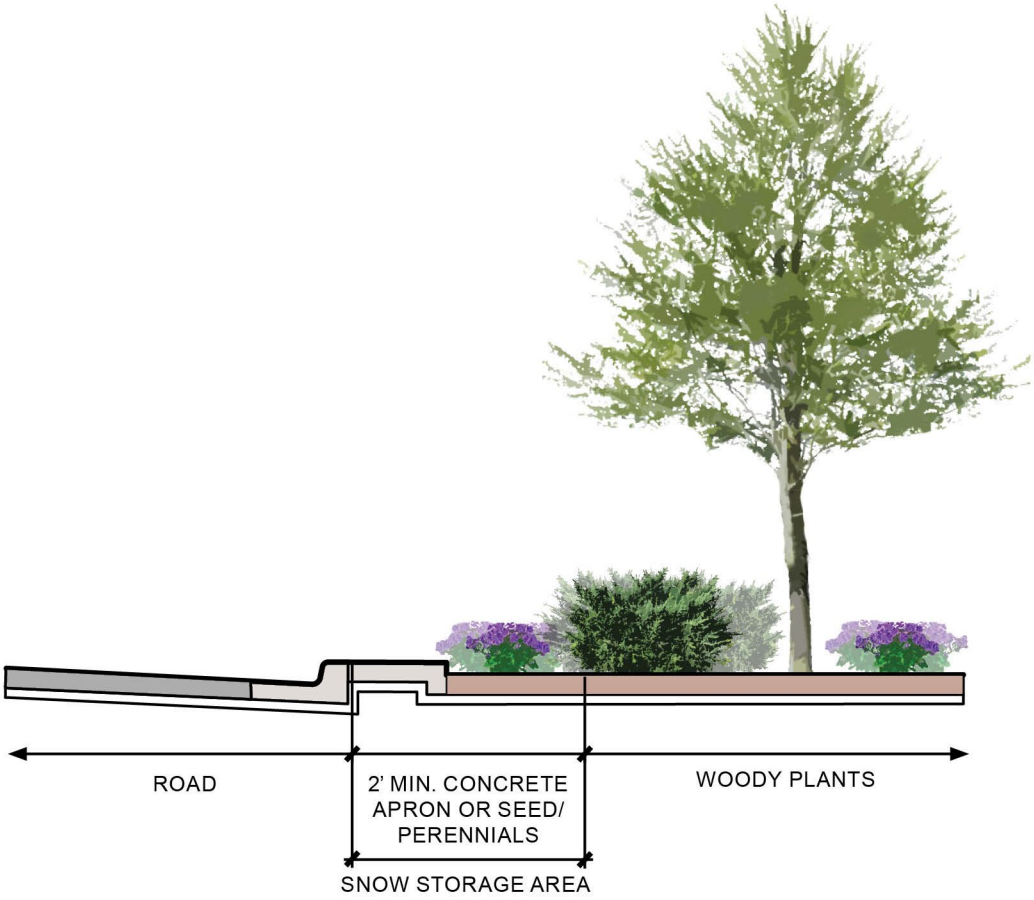

Figure 3 - 2: Snow Storage Area Without Cluster Planting

8. Irrigation

Permanent irrigation systems are not recommended for municipal projects due to the high cost of maintaining and operating such systems. Climate adapted design that utilizes native species does not need supplemental irrigation once established. If irrigation systems must be used, temporary low-maintenance drip systems that conserve water and target plant roots directly are preferred.

3.3 C Plant Selection

In a well-designed landscape plan, plants are carefully selected and arranged to perform a myriad of functions. The following information is intended to provide guidance in this process.

Species Selection:

- Projects should prioritize selecting native plants and plants that are adapted to Anchorage's climate, can tolerate the conditions of an urban environment, and support local biodiversity. Ensure that the species will be successful in urban settings with conditions such as compaction or salt pollution.

- Design professionals should be familiar with municipal, state, and federal lists and regulations for invasive species. Invasive species should not be specified. Invasive species found in existing vegetation should be removed and replaced with a suitable alternative.

- The Alaska Center for Conservation Science at the University of Alaska Anchorage has information about invasives and species that are an ecological risk. Alaska Exotic Plants Information Clearinghouse (AKEPIC) database portal offers up-to-date information on invasive species.

- Plants that are known to be toxic to moose or other animals should not be used.

Hardiness:

- The Anchorage Bowl falls within USDA hardiness Zones 1 through 5 and microclimates may additionally modify these zones. Designers must consider plant hardiness, wind tolerance, and moisture needs when selecting a species. As the climate in Anchorage continues to change, reference the most recent version of the USDA Plant Hardiness Zone Map to ensure the correct hardiness zone is being used. In addition to climate changes, rain and snow quantities are also changing and must be considered. Finally, it is important to understand growing degree days (GDD) to select appropriate, hardy plants that work where the growing season is short and cool.

- Microclimates are localized variations in climate conditions caused by factors including elevation, wind and sun exposure, and nearby vegetation and structures. In Anchorage, open areas or elevated sites experience harsher winds, which can damage plants and dry out soil. Areas near buildings and paved surfaces may experience warmer temperatures from heat retention or cooler zones in shaded spots. Snow accumulation from plowing or drifting, as well as ice melting runoff

from roofs, can further create unique challenges to microclimates. Recognizing variations is crucial for selecting plants and designing layouts that fit each site's specific conditions.

Environmental Impact:

- Plants that attract pollinators and wildlife, including birds, should be selected whenever reasonable. While careful consideration is needed to ensure that wildlife will not pose any safety risks and large fruits don't create barriers to those with physical disabilities, streetscapes can play a key role in supporting small-scale ecosystems and a healthy robust urban environment, especially when connected to a larger green network.

- Using a variety of plants enhances habitat by improving biodiversity and can create a lower-maintenance planting that responds better to pests and disease.

Maintenance:

- Designers should discuss with the owner (MOA or private) and their respective maintenance departments the various levels of maintenance that would be expected for a given finished project and select plants accordingly.
- The availability of water during the establishment period should be considered to ensure plants are properly watered per M.A.S.S. 75.02.6B.

- Consider whether species have maintenance impacts including fruit drop, extensive/shallow root systems, or aggressively spread to determine if they are appropriate for the site.

END OF SECTION 3.3

SECTION 3.4 STREET LANDSCAPE

Landscaping along municipal streets serves functional purposes such as improving pedestrian safety, managing stormwater, improving air quality, reducing noise, supporting ecological health, calming traffic, enhancing life quality, offering habitat, and improving social well-being. The landscape goals vary per street typology and context of each street. This section covers general considerations for new landscaping along streets, followed by a more specific look at each street typology depending on its setting- urban center, urban area, or rural area.

3.4 A New Landscaping

Often the ROW is very limited, and in these situations, planting priorities should be towards safety and function, such as space delineation, traffic calming, stormwater management, etc., depending on site conditions. When ROW space allows, greater consideration is afforded to other elements that enhance the overall public space. Streetscape designs involve several considerations including visibility, long-term maintenance, and snow storage discussed earlier as well as the following:

1. Public Process

All new construction or reconstruction projects involving streets and highways of collector or greater designation are required to have a site plan/landscaping review by the Planning and Zoning Commission or Urban Design Commission as mandated in AMC 21.03.190, although there are currently no requirements in code for providing landscape within the ROW. However, landscaping on roads significantly improves the streetscape by using the methods outlined in this document to create safer streets and complement the livability and character of neighborhoods. The community also benefits from improvements such as noise pollution reduction and increased stormwater infrastructure. This section includes design criteria and establishes standards for landscaping improvements of all types of municipal streets.

2. Utility Conflicts

The ROW is used for many different types of infrastructure, with a primary use being overhead and underground utilities. The location of these utilities must be considered and may have an impact on the available planting space and plant locations. Additionally, plants grow at a relatively slow pace in Anchorage because of the climatic conditions and cold soil. Thus, if plants are planted over utilities, it is important to consider future maintenance of utilities when designing the plantings or streetscapes by choosing plants and ground treatments that can be easily and economically replaced when utilities need to be maintained. See State of Alaska Utilities website listed in Section 3.9. References.

3. Visibility Triangles

The term “Visibility Triangle” refers to the area at an intersection or driveway approach that is maintained free of visual obstructions to allow roadway users to perceive the presence of other, potentially conflicting users. Designs shall follow criteria in DCM Chapter 1 in providing visibility triangles for all users including drivers, bikers, and pedestrians at driveway and intersection approaches. Where visibility triangles are not necessary because all approaches are controlled, designs shall provide a pedestrian and/or bicycle visibility zone on all intersection approaches (Figure 3-3).

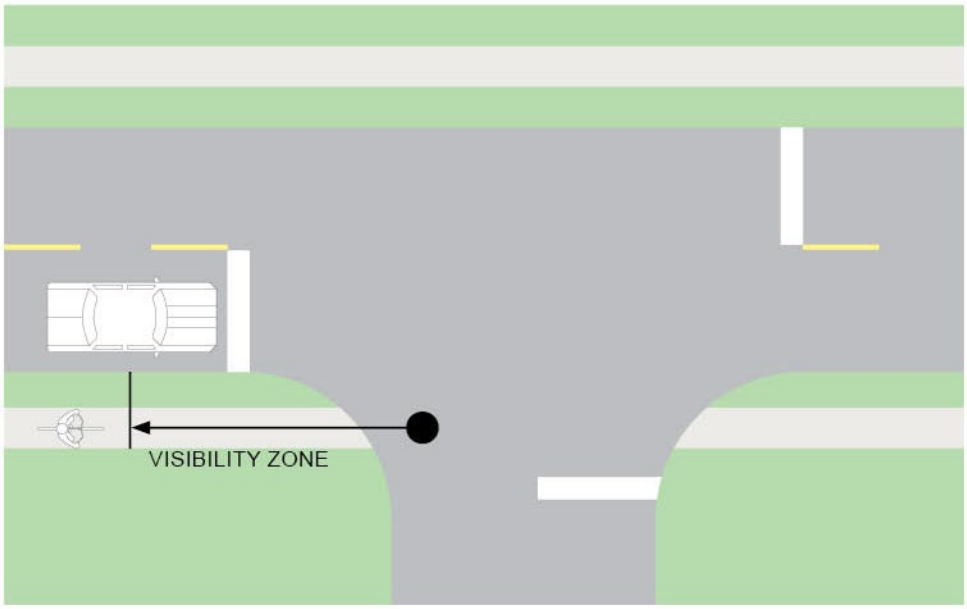

Figure 3 - 3: Visibility Zone

AMC 21.07.080F.2.b references "Clear Vision Area Requirements". Shrubs that need aggressive pruning to maintain a height below twenty-four inches are not allowed. Trees must not branch below 8' height from adjacent paved area. The height calculation must include consideration of the elevation relative to the driver's eye; thus, planters or curbs that elevate the plant must be deducted from the calculation or can be added to the calculation for tree branching height. Additionally, trees in visibility triangles should be spaced apart such that, cumulatively, mass plantings do not obscure the driver's vision of oncoming traffic. For information about Visibility Triangles refer to Chapter 1 of the DCM. Other organizations and owners, such as AASHTO, NACTO, and DOT, have their own standards that must be followed if necessary for the project.

4. Clear Zones

As defined in DCM Chapter 1, the clear zone is the total roadside border area, starting at the edge of traveled way, available for safe use by errant vehicles. The desired width of the clear zone is dependent on the traffic volume, design speed, and roadside geometry. Designers should work with the project engineer to determine the appropriate clear zone and ensure that any landscaping and site elements do not present hazards within it.

5. Funding

Some sources of funding (particularly from Federal transportation sources) have limitations that prevent them from being used to fund landscaping improvements. In these cases, it is necessary to seek alternative funding sources such as municipal bonds or state grants to pay for project landscaping. Funding limitations can be particularly problematic where ROW acquisitions are needed. It may not be possible to include space for landscaping in ROW acquisitions if the funding has limitations that exclude landscaping.

3.4 B Landscaping in Urban Centers

Landscaping varies by street classification, from major arterials to local roads, and is specific to urban centers, urban areas, and rural contexts. Road classifications are provided in the OS&HP, and the classification designations are defined in Chapter 1 of the DCM. Adjacent land uses are categorized as "Urban" (or "Class A" in AMC Title 21) or "Rural" (or "Class B" in AMC Title 21). See table below for zoning associations with these classes (Figure 3-4).

TABLE 21.08-1: IMPROVEMENT AREAS DEFINED

District Type	Class A	Class B
Residential	R-1 R-1A R-2A R-2D R-2M R-3 R-3A R-4 R-4A R-5	R-6 R-7 R-8 R-9 R-10
Commercial	B-1A B-1B B-3 RO MC	
Downtown (DT)	B-2A B-2B B-2C	
Industrial	I-1 I-2 MI	
Other Districts	A	TA WS

Figure 3 – 4: Zoning Classification

1. Streets in Urban Centers

Per the Anchorage 2040 Plan, City and Town Centers, Main Street Corridors, and Transit-supportive Development are streetscapes that promote pedestrian use in an urban setting by having compact and dense land-use and safe, interesting pedestrian spaces. These areas are focal points for community and commerce as they exhibit the highest degree of interaction between different land uses. Streetscapes should be designed to facilitate window-shopping and enjoyable pedestrian spaces (Figure 3-5). Sidewalks for storefronts and buildings should have a minimum six-foot wide clear zone for efficient pedestrian circulation and a two-foot friction zone for a storefront viewing area. Wherever possible, all objects within the site furnishings area, including plantings, signage, furnishings, etc., shall be consolidated to minimize obstructions and spaced a minimum of 6 feet apart to allow for mechanized snow clearing. It is particularly important to have street trees because of the direct positive functional, environmental, and economic benefits. This includes calming automotive traffic in pedestrian-oriented streetscapes, improving ecological resiliency, and improved public perception resulting in increased public patronage. Refer to DCM 3.3B.4 for information about planting methods for street trees on urban streets. In the downtown area, landscape standards for sites adjacent to the ROW are provided in AMC Title 21.11.

Collector and arterial streets in city and town centers should also provide a minimum two-foot setback from the back of curb to any **streetscape elements**, such as parking meters, trash receptacles, hanging baskets, tree guards, raised planters, or light posts. This setback is the minimum required for pedestrian

safety and provides space for temporary snow storage and access to curbside parking. Per the MOA *Our Downtown Plan*, sidewalks along designated "Pedestrian-oriented mixed-use streets" should have at least 8–12 feet of clear width. See the Anchorage *Our Downtown Plan* for additional information.

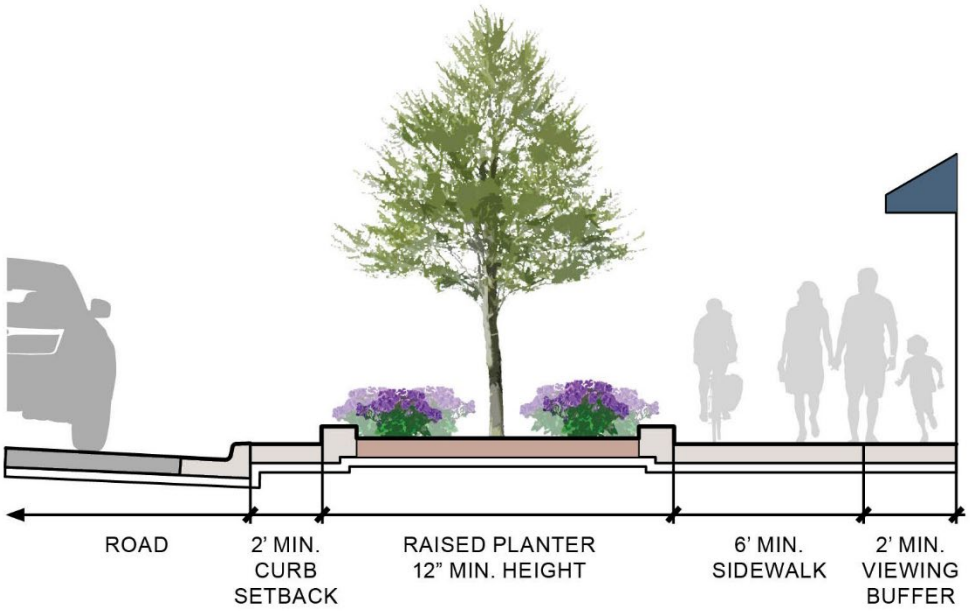

Figure 3 - 5: Urban Center Street - Raised Planter

For residential areas in Urban Centers, it is important to create streetscapes that assist in private and public space delineation and use Crime Prevention Through Environmental Design (CPTED) practices to foster feelings of safety. Per the MOA *Our Downtown Plan*, landscaping between residential buildings and the street is encouraged. Using landscape elements to soften the urban fabric can be a powerful tool in creating inviting residential streets (Figure 3-6).

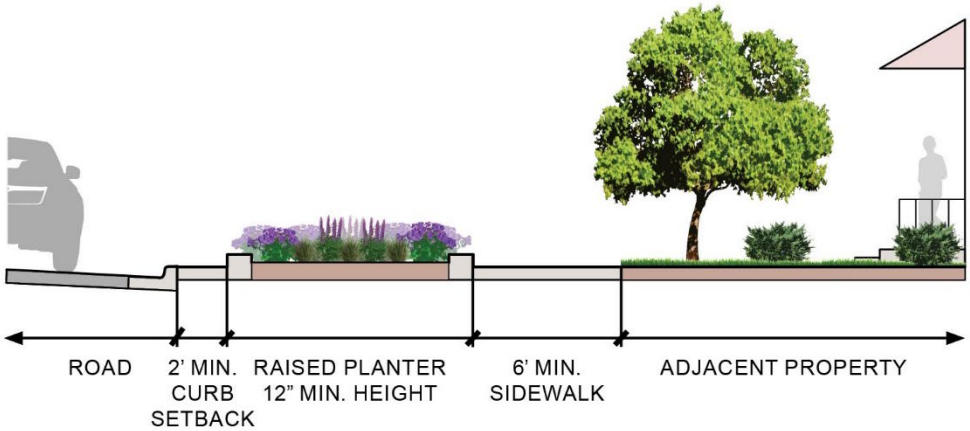

Figure 3 - 6: Urban Center Street – Residential

3.4 C Landscaping in Urban/Class A Areas

1. Major Arterial (Class III)

Major Arterial streets have high traffic volumes where separation is desired between the back of curb and pedestrian facilities to provide increased pedestrian comfort as well as snow storage area. Landscaping along major arterials has a significant role in defining the different functional zones (pedestrian, vehicle, bicycles, green infrastructure, etc.) within the road section as well as providing environmental benefits by creating a larger network of green space, improving air quality, reducing and improving run-off, protecting neighborhoods by providing buffering, and improving aesthetics. Visibility triangles address safety issues by allowing drivers to see adjacent pedestrians or wildlife activity. A grass or perennial strip for snow storage and utilities should be provided between the back of curb and sidewalk appropriately sized per the DCM Chapter 1 and Figure 3-7. In a case-by-case basis, perennials may be accepted in lieu of grass seed if their root systems are located so that they will not be injured by snow clearing machinery.

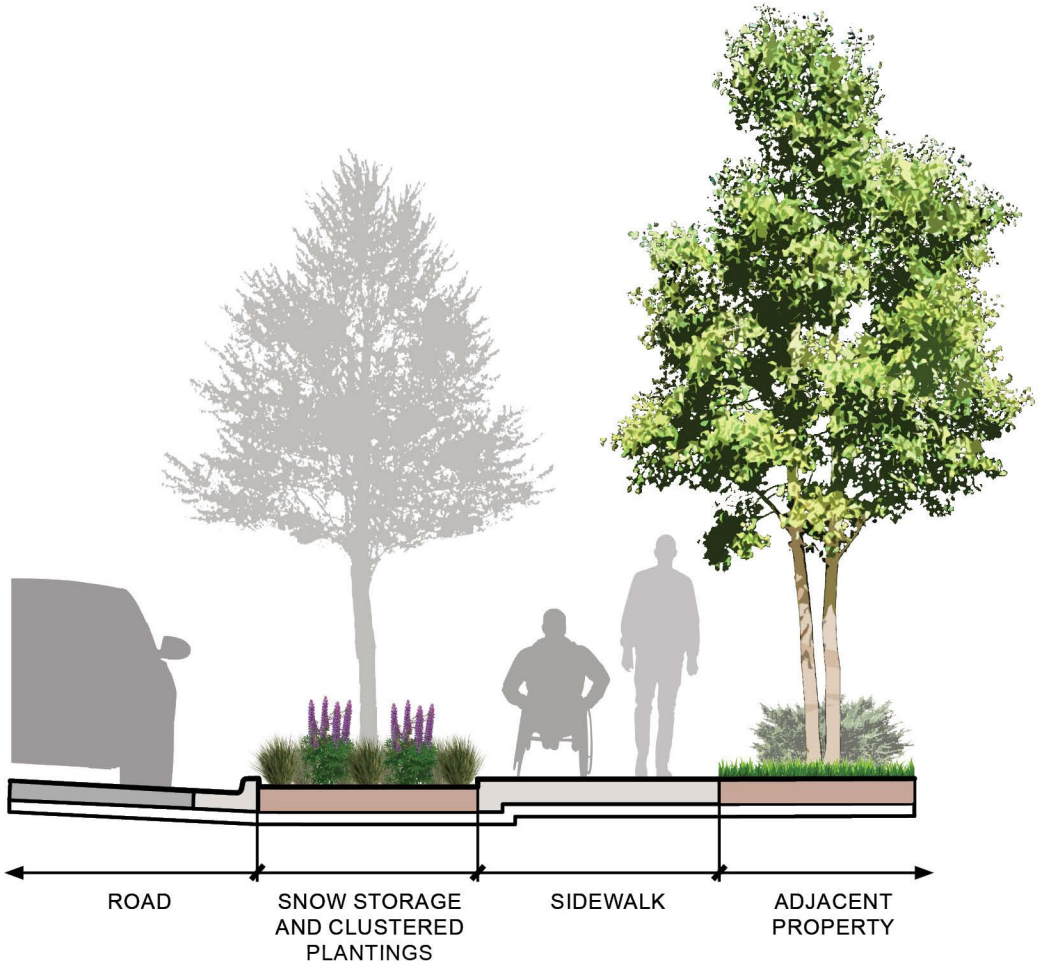

Figure 3 - 7: Urban Major Arterial Street

Divided roadways are a desirable treatment for many major arterials for purposes of safety, aesthetics, traffic-calming, and reduced headlight glare. Medians designed for plant materials should be mounded (2:1 to 3:1 slope) or elevated with raised curbs or planters to provide less exposure of plant material to road salts (Figure 3-8). Double curbs should be considered for arterial roads to provide necessary protection for plant material. If no curbs are present and the median is a swale, generally trees should not be planted except where adequate width exists, and always outside of the swale flowline. Channeling or diverting runoff into medians, planting strips, and other landscape beds can provide water input which can increase plant survival in addition to stormwater filtration and absorption. Medians are often exposed to far more wind and sun than areas along the sides of roadways which benefit from the protection of adjacent forests or structures.

The designer should carefully consider the long-term maintenance the landscaping will receive and specify plant material that can withstand the harsh conditions found in roadside environments. On these roads with high volume and speeds, it is especially important to select plant material that does not provide moose browse.

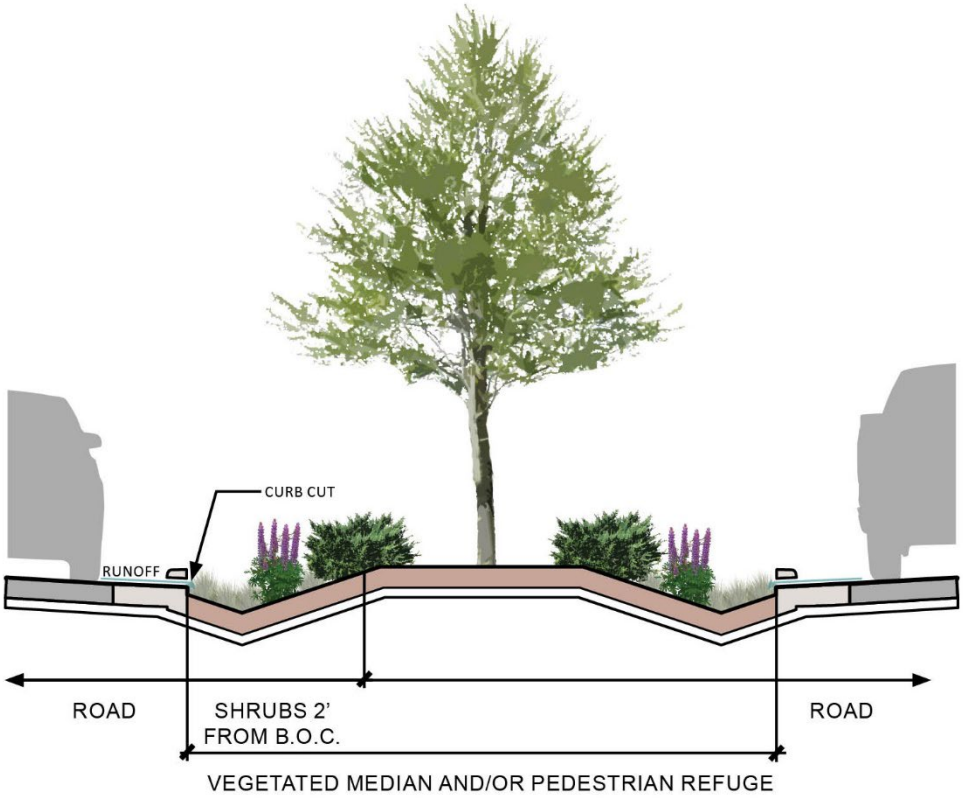

Figure 3 - 8: Urban Major Street Arterial – Median

2. Minor Arterial (Class II)

The landscape treatment of minor arterials should be like that of major arterials. However, lower traffic volumes and typically lower speeds may reduce the need to provide specific attention for adjoining properties, depending on the location and available ROW. As with Major Arterials, an area for snow storage and utilities should be provided adjacent to the curb with limited obstructions and/or landscaping. Reference Class A Major Arterials (above) for street tree and landscape buffer discussions.

3. Collector Streets (Class I)

Collector streets are generally lined with residential properties where an attractive landscape is beneficial to the neighborhood's overall visual character. Landscaping efforts should provide plantings that integrate new improvements with those of adjacent residential properties to provide an attractive transition between the street and the buildings (Figure 3-9). Consideration should be given to placing underground utilities as close to the curb as possible to minimize conflicts with area residences.

The strip between the travel way and sidewalks/trails could be seeded, used for stormwater management, or depending on site conditions, planted with trees and shrubs in clusters. Additional landscaping can be placed to the outside edge of the ROW adjacent to the property lines.

Similar to arterials, if trees are present in the median, there should be a curb, and the planting bed should be mounded. If the median has a swale for stormwater management, trees should not be located in the swale line.

Figure 3 - 9: Urban Collector Street

4. Local Streets

Landscaping on local roads is often limited due to the sight-distance triangles of the driveways that line the streets. Landscaping on these streets will need to be very site-specific and preserving

existing vegetation should be a primary focus. When applicable, streetscape design for these roads should align with those of collector streets.

3.4 D Landscaping in Rural/Class B Areas

Class B streets are built with strip-paved road sections without curbs. The drainage is handled in roadside ditches that also store snow throughout the winter without hauling. These conditions are ideal for the implementation of green infrastructure as outlined in DCM Chapter 2 Volume 1.

Rural streets benefit from the separation of sidewalks or side paths from roads for safety and maintenance. Utility installations are most desirable under trails and road areas to avoid conflict with the landscape installation.

1. Major Arterial (Class III)

A primary goal of landscape along Major Arterials in rural areas is to buffer residential or public use areas from traffic. To improve the pedestrian experience in these rural areas and improve ecological function, green infrastructure such as vegetated swales are used to provide stormwater capacity and pedestrian buffers (Figure 3-10). Channeling or diverting runoff into medians, planting strips, and other landscape beds can provide water input, which can increase plant survivability. In swales for stormwater management, whether on the side of the road or in a median, trees should not be planted in the bottom of the swale. However, where the distance between the road and sidewalk is wide enough, additional plantings can be added for a combined swale and landscape planting bed (Figure 3-12).

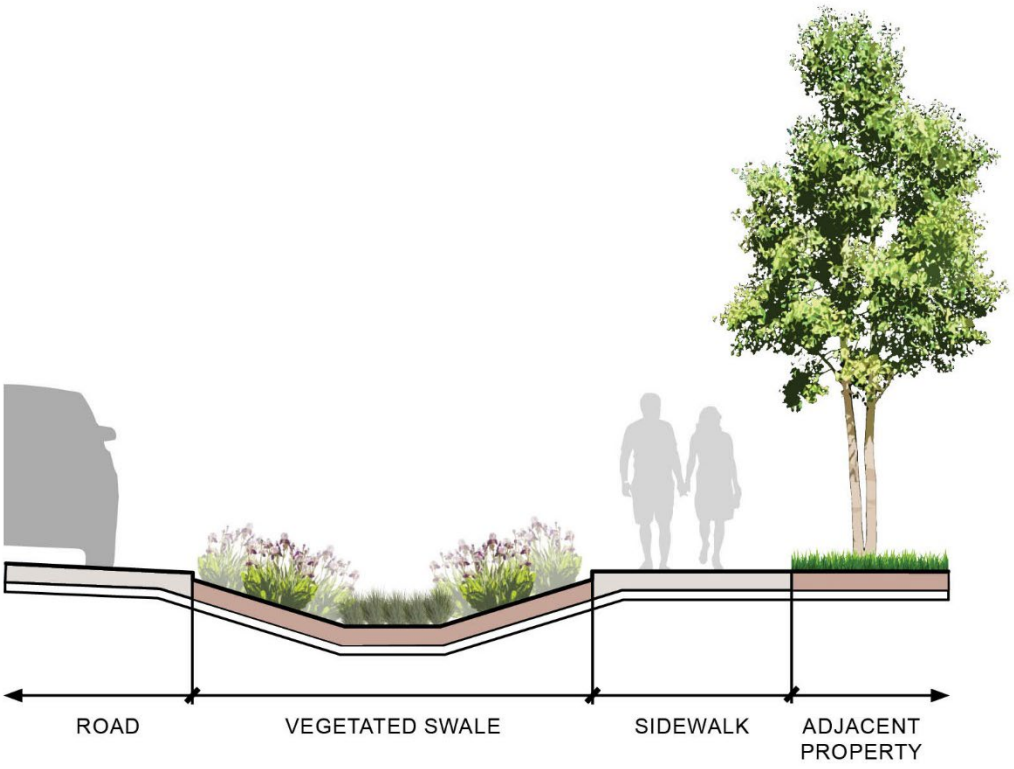

Figure 3 - 10: Rural Major Arterial

2. Minor Arterial (Class II)

The design of Minor Arterials in Class B are like those in Class A, but without curb and gutter. The area between the road and sidewalk is intended for snow storage and drainage (Figure 3-11).

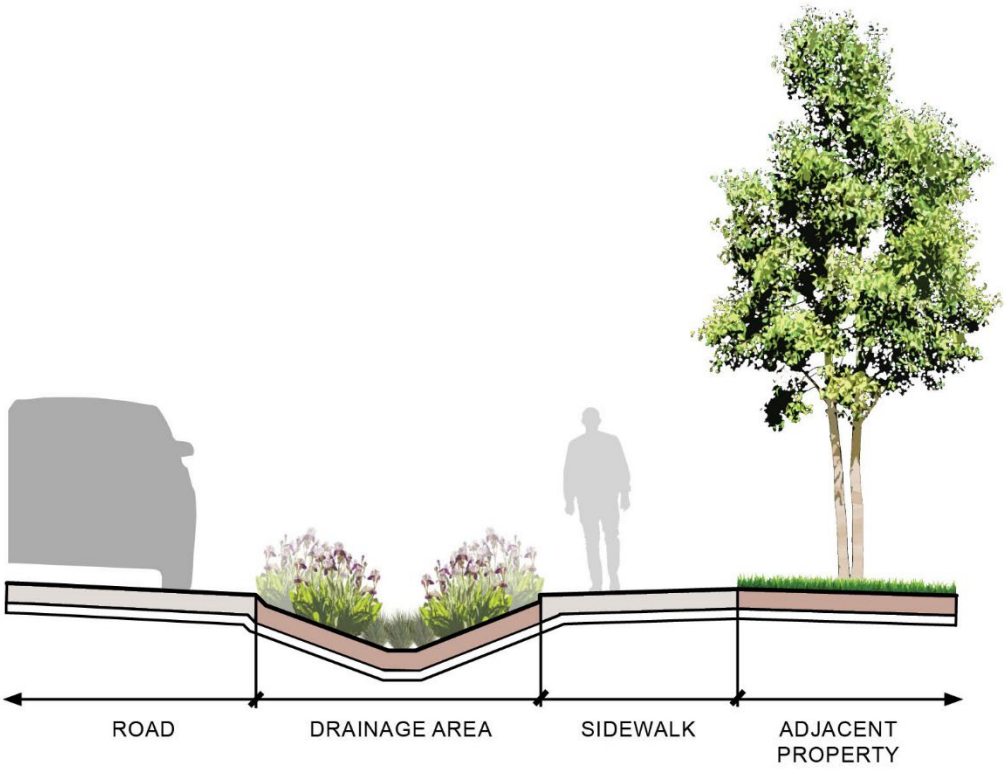

Figure 3 - 11: Rural Minor Arterial

Rural locations may offer opportunities for an enhanced multi-use trail experience by using landscape in some locations as buffers between users and vehicles. Where ROW allows, drainage and landscape areas can be combined for greatest safety while maintaining function (Figure 3-12). Similar to planting in medians, trees should be kept out of the swale flowline.

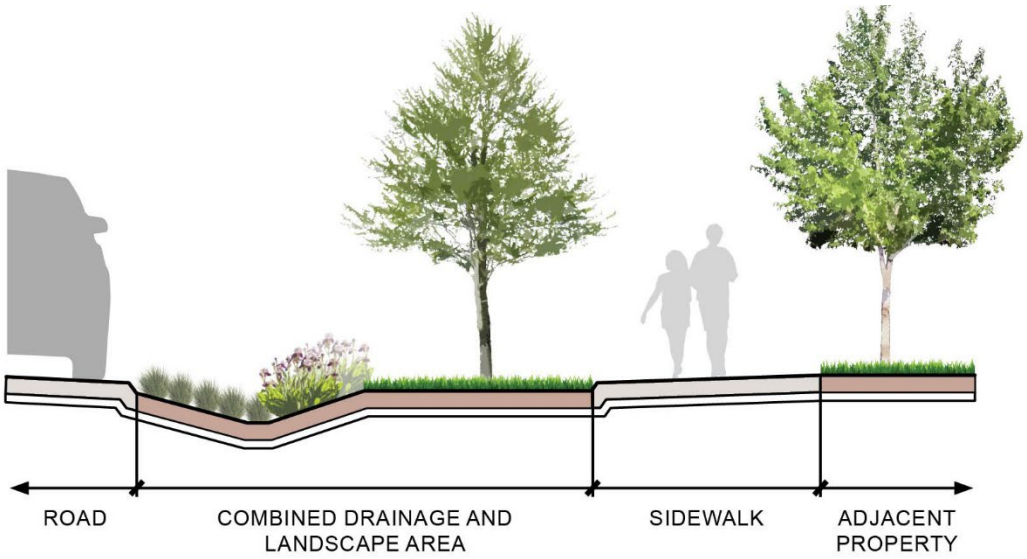

Figure 3 - 12: Rural Minor Arterial - Landscape Buffer

3. Collector Streets (Class I)

These streets are typically lined with residential properties where a comfortable, attractive streetscape benefits the neighborhood's overall visual character. Plantings should be tied to the landscaping provided by adjacent residential properties where possible. The treatment of Rural/Class B Collector Streets should be similar to Rural/Class B Minor Arterials (Figure 3-13). If the snow storage area is not being used for drainage, trees and shrubs may be planted in clusters that allow for efficient snow management.

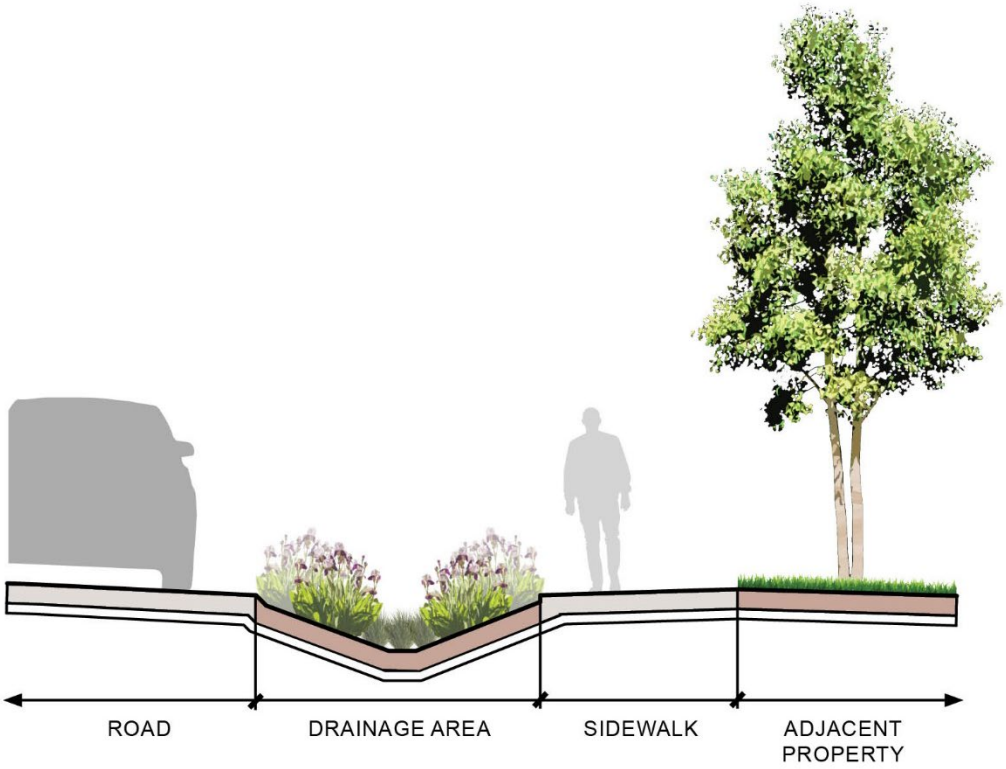

Figure 3 - 13: Rural Collector Streets

4. Local Streets

Similar to urban local streets, landscaping on rural local roads is often limited due to the sight-distance triangles of the driveways that line the streets. Landscaping on these streets will need to be very site-specific and preserving existing vegetation should be a primary focus. When applicable, streetscape design for these roads should align with those of collector streets.

END OF SECTION 3.4

SECTION 3.5 CONSIDERATIONS FOR ADDITIONAL RIGHTS-OF-WAY FOR LANDSCAPE

ROW is seldom sufficient to meet all the needs for roadway, snow storage, paths, sidewalks, and landscaping. Designers should seek creative means to solve issues resulting from competing demands. Art, fencing, or screening panels are often an appropriate amenity that can be employed in tight spaces or places where plant materials may not survive.

While not common practice, there may be occasions where purchase of additional ROW should be considered. These decisions require close coordination between the project manager, the engineer, the arborist, and the landscape architect. A significant part of this determination will be received from the public relative to how the project affects the neighborhood. The approach of "context-sensitive design" is often used to describe an interactive decision-making approach that ensures the public is integrated into project decisions. Designers should refer to "A Strategy for Developing Context Sensitive Transportation Projects" for direction on integrating the public into project decisions.

Designers should weigh the following in determining whether additional ROW is necessary:

- Community vision of the roadway
- Existing vegetation locations
- Utility alignment locations
- Adjacent landowner uses
- Plant selection for the allowable spaces
- Cost implications

END OF SECTION 3.5

SECTION 3.6 PUBLIC OPEN SPACE AND PARKS PROJECTS

Parks play a significant role in providing recreational green space to communities and are often core areas for ecological function within cities. It is important that street projects and park projects are aligned in their goals and work together to create a strong green network system. Additionally, park projects are subject to many of the same aspects of development as building and road projects.

1. Municipal Code Review

While parks are seen as compatible elements of neighborhoods, significant development can be controversial. Parking lot, landscaping, and Site Plan Review requirements should be addressed early in proposed plans. Municipal projects are required to go through the approval process per AMC 21.05.040G.2. The exact requirements of these reviews can vary depending on the size of the project.

Project managers should ensure that these projects are scheduled for appropriate reviews. Park development projects are also typically scheduled with presentations and hearings (both concept and final) before the Parks and Recreation Commission, the Eagle River Board of Supervisors, or the Girdwood Board of Supervisors. Master plans must be presented to the appropriate commission prior to being scheduled before the Planning and Zoning Commission.

Depending on the project, additional code requirements may need to be satisfied, for example, projects that provide parking are subject to the requirements of AMC 21.07.090H.3 for parking lot landscaping. Park projects may require a Stormwater Pollution Prevention Plan (SWPPP) prepared, something that is typically placed on the contractor through the special provisions for contracted work.

2. Streambank Protection and Restoration

The many waterways that run along municipal lands are essential to the local ecosystem. Some projects, such as bridges and culvert upgrades, may require the need to clear out the streambanks for construction. When this is the case, it is vital that proper protection and restoration efforts are made to revegetate the area and improve the quality of the wetland area to uphold the integrity of the waterway. Refer to guides such as Stream Bank Revegetation and Protection- A Guide for Alaska by the Alaska Department of Fish and Game for information about different revegetation techniques. For information about permitting of wetland projects, refer to the Anchorage Stormwater Manual (Volume 1&2), contact the U.S. Army Corps of Engineers, MOA Watershed Management Services or MOA Planning.

3. Design Goals

It is important for street and park projects to work together to enhance the community. These projects are significant components of transportation connections and creating a system of green corridors. The following values should be considered to better align park and streets projects:

Equity and Cultural Identity:

- Design parks and pathways to be accessible for individuals of all abilities and ages by incorporating accessible pathways, seating, and amenities where possible and incorporating planning for proper maintenance of facilities throughout the year. Refer to DCM Chapter 4 "Trails" for additional guidelines for trails and pathways to provide seamless transitions between on-street facilities and trails for non-motorized users.
- Use place-based design to reflect the natural and cultural context of the surrounding community by using interpretive signage, traditional art, and culturally significant plantings.
- Blend municipal and private landscaping to create a cohesive look and identity throughout a community.
- Use art, plantings, and other design elements to create distinctive patterns and visuals to support and strengthen identity.

Sustainability and Environmental Stewardship:

- Creating a robust green network anchored by municipal park land to create more resilient urban landscapes.
- Creating and maintaining quality habitat for local and migratory species.
- Use native and climate-resilient plant species to enhance biodiversity and reduce maintenance.
- Work with street projects to create comprehensive stormwater management features.
- Create cohesive plans to adapt and protect the ecological function of a site for it to perform well. This is especially important for parks that are within or near estuaries or wetlands that have critical ecological systems.

END OF SECTION 3.6

SECTION 3.7 SCREENING AND BUFFERING OF PARKING LOTS, BUILDINGS, AND OTHER DEVELOPMENTS

Effective screening and buffering are essential for mitigating the visual and environmental impacts of different development projects. Thoughtfully designed landscaping promotes safety by delineating pedestrian and vehicular spaces, defining public and private space, and improving visibility. Plantings, especially when designed with green infrastructure systems, can improve stormwater management, reduce urban heat island effects, and enhance green corridors. These measures ensure that private development can contribute positively to Anchorage's urban landscape, aligning with the broader goals of sustainability, functionality, and community well-being outlined in this chapter.

Anchorage Municipal Code Title 21 provides guidance on the minimums required for buffering and screening of parking lots and buildings, including planting bed areas, plant counts, among other design features. Refer to AMC 21.07.080 for requirements for screening. Standard planting details are provided in M.A.S.S. Div. 75.

END OF SECTION 3.7

SECTION 3.8 GLOSSARY

CLIMATE ADAPTED DESIGN: the practice of designing spaces that respond to and mitigate the impacts of climate change. It emphasizes using native species in resilient planting strategies, water management systems, and site-specific solutions to address issues like extreme weather, rising temperatures, and biodiversity loss, ensuring sustainable and functional landscapes for future conditions.

CONTEXT SENSITIVE SOLUTIONS/CONTEXT SENSITIVE DESIGN (CSS/CSD): often used interchangeably, these terms refer to a process used by the Municipality of Anchorage in the project development process. This method seeks to achieve community building by inclusion of the public throughout the decision-making stages of project development. These procedures seek solutions/designs that: are collaborative in nature; are in harmony with scenic, historic, and environmental values; are efficient with respect to use of time, budget, and community resources; create facilities that add lasting value to the community; allow the public to contribute to the definition of a project's scope; and balance competing desires. The process is described in A Strategy for Developing Context Sensitive Transportation Projects as adopted by the Municipality of Anchorage on 10/14/2008.

LOW IMPACT DEVELOPMENT (LID): an ecologically based stormwater management approach to manage rainfall on site through a vegetated treatment network including infiltration, storage, filtration, and evaporation.

STREETSCAPE: the visual elements of the street including the road, adjoining buildings, street furniture, plantings, sidewalks, and open space that combine to form the street's character.

TREE PROTECTION ZONE (TPZ): defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development. The TPZ should encompass the CRZ, based on the judgement of the arborist.

END OF SECTION 3.8

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END OF SECTION 3.9