

Roadside Guidelines

Roadside planning, design, construction, and maintenance activities are conducted according to the roadside guidelines provided in Tables I - IV. These guidelines provide statewide parameters at a policy level. Regional variations in roadside treatment must fall within these statewide parameters (see Figure 3). Departmental manuals, including the *Design Manual* (M 22-01), *Roadside Manual* (M 25-30), *Maintenance Manual* (M 51-01), *Highway Runoff Manual* (M 31-16), and *Environmental Procedures Manual* (M 31-11) contain recommended practices for guideline implementation.

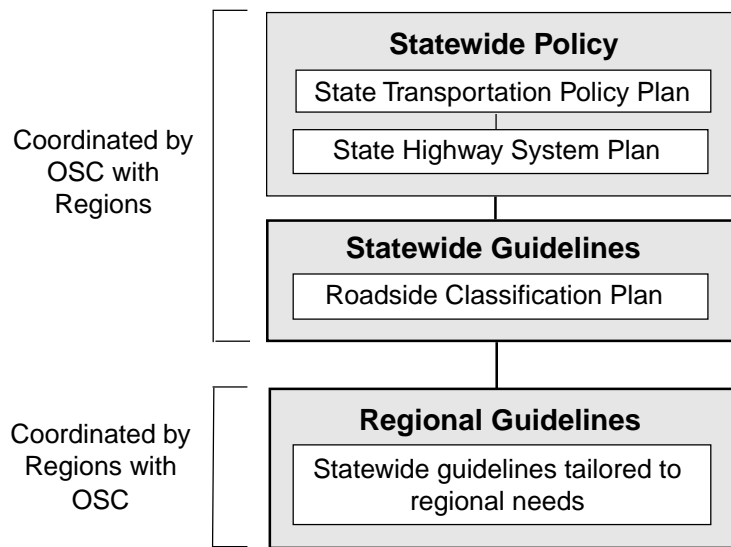


Figure 3

Treatment Levels

Roadside restoration is implemented through both construction and maintenance activities.

In the case of construction activities, the appropriate roadside treatment level is determined during the project summary stage by using the RCP guidelines tables. Treatment levels are recorded on the Design Decisions Summary Form, along with mileposts and references to environmental documentation and/or specific public commitments, where applicable.

Maintenance activities sustain the roadside treatments established by construction activities. All maintenance activities are in accordance with Treatment Level 1.

Treatment levels are as follows (for more on the programs mentioned below, refer to the State Highway System Plan):

Treatment Level 1 (TL 1)

- The intent of TL 1 is to use maintenance activities, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character. Treatment Level 1 applies to the entire roadside. Treatment Level 1 is the basic level of treatment for Highway Maintenance (Program M). The maintenance budget is financially responsible for these activities.

Treatment Level 2 (TL 2)

- The intent of TL2 is to use construction activities to restore the roadside to the designated roadside character within the construction limits of the project (including construction easements). Treatment Level 2 is the basic level of roadside treatment for all construction projects. TL2 does not apply under Preservation Programs (P1, P2, P3), the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.

Treatment Level 3 (TL 3)

- The intent of TL 3 is to use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments. Use of TL 3 requires the approval of the State Design Engineer.

Treatment Tools

The basic treatment tools used to restore roadside character are: landform, vegetation, and structure.

Landform

Landform includes soil, rock outcrops, and the surface and subsurface configurations of land. Landform is used to accomplish operational, environmental, and visual functions. Roadside are graded to match adjacent slopes and reflect surrounding topography. Designs diverging from conventional road geometry may be necessary to fulfill these aims.

Roadside landforms are designed and graded to manage stormwater runoff and surface water infiltration, where necessary, and to carry out approved wetland preservation and mitigation measures. Rock cuts are designed for minimal visual impact, in accordance with safety standards.

Landforms, such as berms, may be used to delineate and redirect traffic, screen distractions and unsightly elements, and separate conflicting land uses. These uses of landform may not necessarily blend with the natural contours of adjacent land. Vegetation may be used to blend landform into the surrounding area.

Vegetation

Roadsides are planned, designed, constructed, and maintained for permanent vegetative cover, in coordination with roadside management zones (see Appendices for roadside management zone objectives). Existing native vegetation is protected wherever possible, and native plant material is used wherever conditions

permit. Desirable volunteer plants are encouraged, invasive species discouraged, and native plant communities are restored through Integrated Vegetation Management (IVM).

When other plant material is used, species are selected for adaptability to roadside conditions, compatibility with native species and roadside functions, and appearance in harmony with roadside character.

In the design of roadside projects, appropriate site and soil analyses are performed and plant characteristics are matched with site and soil conditions. Plant material is selected and located for minimal long-term maintenance (including water use), and minimal fertilizer and pesticide use. Plant material must be compatible with desirable volunteer growth.

Structures

Structures, such as traffic and noise barriers, utility structures, retaining walls, and vegetated earth walls, are designed and located to reduce contrast between built and natural elements and facilitate wildlife needs. Structures are designed to blend with local architecture and history, where appropriate, and to enhance corridor continuity. Materials are selected to coordinate with roadside character, and vegetation is used to soften or enhance the appearance of structures.

Treatment Strategies

Treatment strategies coordinate implementation of roadside guidelines and fulfill roadside functions through construction and/or maintenance activities.

Enclose/Screen

Let existing vegetation grow, plant additional vegetation, extend landform, and/or install structure to:

- Establish a buffer or barrier to reduce roadway noise levels at adjacent properties;
- Establish a buffer or barrier to screen visual distractions and undesirable views;
- Reduce solar and headlight glare;
- Facilitate speed control, positive guidance, and navigation; and/or
- Produce a sense of enclosure for aesthetic reasons.

Expose

Remove or prune vegetation, grade landform, and/or remove structure to:

- Preserve or restore existing scenic or desirable views as seen from the roadway;
- Remove vegetation for utility accommodation in accordance with the Utilities Accommodation Policy; and/or
- Remove vegetation for solar exposure of pavement when such removal is calculated to significantly reduce icing in a highway corridor.

Roadside Treatment

Blend

Bring roadside elements into harmonious composition to:

- Restore roadside character and corridor continuity by acknowledging elements from adjacent land in the roadside design.
- Restore roadside character continuity by integrating various roadside elements within the right of way.

3:P:RCP1

Table 1

Roadside Guidelines

Forest Roadside Character

A roadside classified as forest is characterized by natural-appearing landforms and native trees and/or understory vegetation. Zone 2 may be meadow.

Treatment Level 1	Treatment Level 2	Treatment Level 3
<p>In addition to safety and operational criteria, use maintenance activities only, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character.</p> <p>(The maintenance budget is financially responsible for these activities.)</p> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Encourage native plant communities • Manage vegetation to meet the requirements of operational, environmental, and visual functions with minimal maintenance. • Manage for roadside character continuity; keep level of maintenance consistent throughout each roadside character segment. • Limit the width of Zone 1 as much as possible. • Manage the transition of construction clearing edges to minimize visual impact. • Manage vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Where grass and forbs are preferred in Zone 2, manage as natural-appearing meadow. • Manage the roadside area within any overhead utility corridor to exclude vegetation that will interfere with the utility. • Use IVM to screen visual distractions and undesirable views. • Coordinate with adjacent property owners to protect roadside vegetation from logging or clearing impacts, where possible. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Preserve original architectural design intent. • Manage vegetation to soften the appearance of structures. 	<p>Use construction activities within the construction limits of the project (including construction easements) to restore the roadside to the designated roadside character.</p> <p>[Does not apply under Preservation programs, the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.]</p> <ul style="list-style-type: none"> • Restore operational, environmental, and visual functions. Where possible, work with land use agencies and adjacent land owners to preserve and establish buffer zones. <p><u>Landform</u></p> <ul style="list-style-type: none"> • Adjust grading limits to protect desirable vegetation, natural habitat, wetlands and sensitive areas, and heritage resources. • Design slopes and drainage to manage stormwater runoff, minimize erosion, and achieve slope stability. • Design grading required for construction projects to facilitate maintenance in roadside management Zone 2. • Adjust grading limits to preserve and protect vegetation for screening purposes. • Grade slopes to blend with adjacent slopes and reflect surrounding topography. • Expose scenic views with landform through contour grading where appropriate. • Design rock cuts for minimal impact on visual quality. • Satisfy safety criteria for rock outcrops within roadside management Zone 2 through the use of redirection landforms or traffic barrier extensions. • Where cost-effective, save topsoil for redistribution. <p><u>Vegetation</u></p> <p>In coordination with IVM goals:</p> <ul style="list-style-type: none"> • Minimize site disturbances to protect native plant communities and specimen trees. • Select plant material to accelerate the recovery of native plant communities. • Zone 2: Seed graded and disturbed areas with erosion control seeding mixture; include native grass and forb species in the seeding mixture where possible. • Zone 3: In conjunction with erosion control measures, restore roadside character with native tree seedlings; calculate plant spacing based on site conditions, expected plant survival rate, and density required to discourage establishment of undesirable species. • Select vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Select and locate plant material to facilitate driver guidance, screen visual distractions and undesirable views, and to create a natural appearance. • Locate plantings to frame scenic views. • Design the transition of construction clearing edges to minimize visual impact. • To restore roadside character continuity through blending, integrate various elements within the right of way, while also ensuring that forest character predominates. Where necessary, respond selectively to adjacent land use, as follows: use native plant material; continue roadside design scale through blended area, design for visual continuity throughout the character segment. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Minimize use of structures; design structures to be visually unobtrusive, and select materials to blend with the site and the natural landscape. • Select and manage vegetation to soften the appearance of structures. • Consider scenic views in location and design of structures. • Select traffic barriers to fit harmoniously within the landscape, where a significant reduction in visual impact is required. • Incorporate wildlife needs into the design and location of structures. 	<p>Use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments.</p> <p>(Includes all guidelines in Treatment Level 2, except where superseded by Treatment Level 3 guidelines.)</p> <ul style="list-style-type: none"> • Consider the purchase of additional right of way, the purchase of development rights, and/or the development of partnerships for future screening/buffering and/or environmental functions as adjacent land uses change. <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Restore the roadside with a mixture of native plant material: tree whips, conifers up to 30' in height, and shrub seedlings. • Irrigated lawns may be used in pedestrian areas. • Select vegetation, design planting density, and manage to achieve desired degree of blending and/or to meet screen/enclosure objectives by the tenth year after construction or initial management action. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Structural screening/fences may be used to screen visual distractions and undesirable views where right of way is limited.

Table II

Roadside Guidelines

Open Roadside Character

A roadside classified as open is characterized by natural-appearing landforms and low growing native vegetation or agricultural crops associated with adjacent farming.

Treatment Level 1	Treatment Level 2	Treatment Level 3
<p>In addition to safety and operational criteria, use maintenance activities only, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character.</p> <p>(The maintenance budget is financially responsible for these activities.)</p> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> Encourage native plant communities Manage vegetation to meet the requirements of operational, environmental, and visual functions with minimal maintenance. Manage for roadside character continuity; keep level of maintenance consistent throughout each roadside character segment. Limit the width of Zone 1 as much as possible. Manage vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. Where roadside functions will not be compromised, allow, by permit, agricultural use of the roadside associated with adjacent farming. <p><u>Structure</u></p> <ul style="list-style-type: none"> Preserve original architectural design intent. 	<p>Use construction activities within the construction limits of the project (including construction easements) to restore the roadside to the designated roadside character.</p> <p>[Does not apply under Preservation programs, the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.]</p> <ul style="list-style-type: none"> Restore operational, environmental, and visual functions. Where possible, work with land use agencies and adjacent land owners to preserve and establish buffer zones. <p><u>Landform</u></p> <ul style="list-style-type: none"> Adjust grading limits to protect desirable vegetation, natural habitat, wetlands and sensitive areas, and heritage resources. Design slopes and drainage to manage stormwater runoff, minimize erosion, and achieve slope stability. Design grading required for construction projects to facilitate maintenance in roadside management Zone 2. Design landform to facilitate driver guidance where appropriate. Grade slopes to blend with adjacent slopes and reflect surrounding topography. Expose scenic views with landform through contour grading where appropriate. Design rock cuts for minimal impact on visual quality. Satisfy safety criteria for rock outcrops within roadside management Zone 2 through the use of redirection landforms or traffic barrier extensions. Save topsoil for redistribution. Where a roadside screen or visual barrier between the roadway and adjacent land is necessary, use vegetated earth berms or earth walls. <p><u>Vegetation</u></p> <p>In coordination with IVM goals:</p> <ul style="list-style-type: none"> Minimize site disturbances to protect native plant communities and specimen trees. Zones 2 and 3: Seed graded and disturbed areas with erosion control seeding mixture; incorporate native plant seed into erosion control seed mixtures; use salvaged topsoil as a source for native seed and other vegetative regeneration. Design the transition of construction clearing edges to minimize visual impact. To restore roadside character continuity through blending, integrate various elements within the right of way, while also ensuring that open character predominates. Where necessary, respond selectively to adjacent land use, as follows: use native plant material; continue roadside design scale through blended area; design for visual continuity throughout the character segment; select plant material to accelerate the recovery of native plant communities; select vegetation to control stormwater runoff, minimize erosion, and achieve slope stability; select and locate plant material to create a natural appearance. <p><u>Structure</u></p> <ul style="list-style-type: none"> Minimize use of structures; design structures to be visually unobtrusive, and select materials to blend with the site and the natural landscape. Consider scenic views in location and design of structures. Select traffic barriers to fit harmoniously within the landscape, where a significant reduction in visual impact is required. Select vegetation to soften the appearance of structures. Incorporate wildlife needs into the design and location of structures. 	<p>Use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments.</p> <p>(Includes all guidelines in Treatment Level 2, except where superseded by Treatment Level 3 guidelines.)</p> <ul style="list-style-type: none"> Consider the purchase of additional right of way, the purchase of development rights, and/or the development of partnerships for future screening/buffering and/or environmental functions as adjacent land uses change. <p><u>Vegetation</u></p> <ul style="list-style-type: none"> Restore the roadside with native seedlings; calculate plant spacing based on site conditions, expected plant survival rate, and density required to discourage establishment of undesirable species. Irrigated lawns may be used in pedestrian areas. <p><u>Structure</u></p> <ul style="list-style-type: none"> Use structures for screening only where landform or landform/vegetation solutions are not feasible.

Table III

Roadside Guidelines

Rural Roadside Character

A roadside classified as rural is characterized by natural-appearing landforms and vegetation. Vegetation is predominantly native. Non-native vegetation may reflect historical land use. Zone 2 may be meadow or agricultural crops associated with adjacent farming. Character continuity is provided by uniform Zone 2 management.

Treatment Level 1	Treatment Level 2	Treatment Level 3
<p>In addition to safety and operational criteria, use maintenance activities only, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character.</p> <p>(The maintenance budget is financially responsible for these activities.)</p> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Encourage native plant communities • Manage vegetation to meet the requirements of operational, environmental, and visual functions with minimal maintenance. • Manage for roadside character continuity; keep level of maintenance consistent throughout each roadside character segment. • Limit the width of Zone 1 as much as possible. • Manage the transition of construction clearing edges to minimize visual impact. • Manage vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Where grass and forbs are preferred in Zone 2, manage as natural-appearing meadow. • Manage to achieve desired degree of blending and/or to meet screen/enclosure objectives. • Manage the roadside area within any overhead utility corridor to exclude vegetation that will interfere with the utility. • Use IVM to screen visual distractions and undesirable views. • Where roadside functions will not be compromised, allow, by permit, agricultural use of the roadside associated with adjacent farming. • Coordinate with adjacent property owners to protect roadside vegetation from logging or clearing impacts, where possible. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Preserve original architectural design intent. • Manage vegetation to soften the appearance of structures. 	<p>Use construction activities within the construction limits of the project (including construction easements) to restore the roadside to the designated roadside character.</p> <p>[Does not apply under Preservation programs, the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.]</p> <ul style="list-style-type: none"> • Restore operational, environmental, and visual functions. Where possible, work with land use agencies and adjacent land owners to preserve and establish buffer zones. <p><u>Landform</u></p> <ul style="list-style-type: none"> • Adjust grading limits to protect desirable vegetation, natural habitat, wetlands and sensitive areas, and heritage resources. • Design slopes and drainage to manage stormwater runoff, minimize erosion, and achieve slope stability. • Design grading required for construction projects to facilitate maintenance in roadside management Zone 2. • Adjust grading limits to preserve and protect vegetation for screening purposes. • Grade slopes to blend with adjacent slopes and reflect surrounding topography. • Expose scenic views with landform through contour grading where appropriate. • Design rock cuts for minimal impact on visual quality. • Satisfy safety criteria for rock outcrops within roadside management Zone 2 through the use of redirection landforms or traffic barrier extensions. • Where cost-effective, save topsoil for redistribution. <p><u>Vegetation</u></p> <p>In coordination with IVM goals:</p> <ul style="list-style-type: none"> • Minimize site disturbances to protect native plant communities and specimen trees. • Select plant material to favor native plant communities. • Zone 2: Seed graded and disturbed areas with erosion control seeding mixture; include native grass and forb species in the seeding mixture where possible. • Zone 3: In conjunction with erosion control measures, restore roadside character with tree and shrub seedlings; calculate plant spacing based on site conditions, expected plant survival rate, and density required to discourage establishment of undesirable species. • Select vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Select and locate plant material to facilitate driver guidance, to screen visual distractions and undesirable views, and to create a natural appearance. • Locate plantings to frame scenic views. • Design and manage the transition of construction clearing edges to minimize visual impact. • To restore roadside character continuity through blending, integrate various elements within the right of way, while also ensuring that rural character predominates. Where necessary, respond selectively to adjacent land use, as follows: use native plant material where appropriate; continue roadside design scale through blended area; design for visual continuity throughout the character segment. • Select vegetation and design planting density to achieve desired degree of blending and/or to meet screen/enclosure objectives by the fifteenth year after construction. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Design structures to be visually unobtrusive, and select materials to blend with the site and the natural landscape. • Select vegetation to soften the appearance of structures. • Consider scenic views in location and design of structures. • Select traffic barriers to fit harmoniously within the landscape, where a significant reduction in visual impact is required. • Incorporate wildlife needs into the design and location of structures. 	<p>Use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments.</p> <p>(Includes all guidelines in Treatment Level 2, except where superseded by Treatment Level 3 guidelines.)</p> <ul style="list-style-type: none"> • Consider the purchase of additional right of way, the purchase of development rights, and/or the development of partnerships for future screening/buffering and/or environmental functions as adjacent land uses change. <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Restore the roadside with trees (conifers up to 4 feet in height and deciduous trees up to 1 inch in caliper), and shrub seedlings. • Use temporary irrigation only where unavoidable. • Irrigated lawns may be used in pedestrian areas. • Select vegetation and design planting density to achieve desired degree of blending and/or to meet screen/enclosure objectives by the tenth year after construction or initial management action. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Structural screening/fences may be used to screen views where right of way is limited.

Table IV

Roadside Guidelines

Semiurban Roadside Character

A roadside classified as semiurban is transitional in character. Vegetation is a combination of native and non-native species. Trees and large shrubs are predominant where sufficient right of way is available. Zone 2 may vary from mowed grass to low-maintenance vegetation. Roadside management is used to develop a consistent, informal, moderately-refined appearance in Zone 2. Structures are coordinated for visual continuity throughout the highway corridor.

Treatment Level 1	Treatment Level 2	Treatment Level 3
<p>In addition to safety and operational criteria, use maintenance activities only, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character.</p> <p>(The maintenance budget is financially responsible for these activities.)</p> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> Encourage native plant communities Manage vegetation to meet the requirements of operational, environmental, and visual functions with minimal maintenance. Manage for roadside character continuity; keep level of maintenance consistent throughout each roadside character segment. Limit the width of Zone 1 as much as possible. Manage the transition of construction clearing edges to minimize visual impact. Manage vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. Manage to achieve desired degree of blending and/or to meet screen/enclosure objectives. Manage the roadside area within any overhead utility corridor to exclude vegetation that will interfere with the utility. Use IVM to screen visual distractions and undesirable views. <p><u>Structure</u></p> <ul style="list-style-type: none"> Preserve original architectural design intent. Manage vegetation to soften the appearance of structures. 	<p>Use construction activities within the construction limits of the project (including construction easements) to restore the roadside to the designated roadside character.</p> <p>[Does not apply under Preservation programs, the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.]</p> <ul style="list-style-type: none"> Restore operational, environmental, and visual functions. Where possible, work with land use agencies and adjacent land owners to preserve and establish buffer zones. Design Zone 2 to facilitate maintenance activities. <p><u>Landform</u></p> <ul style="list-style-type: none"> Adjust grading limits to protect desirable vegetation, natural habitat, wetlands and sensitive areas, and heritage resources. Adjust grading limits to preserve and protect vegetation for screening purposes. Design slopes and drainage to manage stormwater runoff, minimize erosion, and achieve slope stability. Grade slopes to provide corridor continuity. Where cost-effective, save topsoil for redistribution. <p><u>Vegetation</u></p> <p>In coordination with IVM goals:</p> <ul style="list-style-type: none"> Minimize site disturbances to protect native plant communities and specimen trees. Zone 2: Seed graded and disturbed areas with erosion control seeding mixture; shrub seedlings may be planted. Calculate plant spacing as below. Zone 3: In conjunction with erosion control measures, restore roadside character with trees (conifers up to 4 feet in height and deciduous trees up to 1 inch in caliper), and shrub seedlings; plant trees of up to 2 inches in caliper in pedestrian areas; calculate plant spacing based on site conditions, expected plant survival rate, and density required to discourage establishment of undesirable species. <ul style="list-style-type: none"> Incorporate planned/existing local street tree programs into roadside plans. Use temporary irrigation for plant establishment where necessary; design permanent irrigation only where unavoidable. Select vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. Select and locate plant material to facilitate driver guidance and to screen visual distractions and undesirable views. Locate plantings to enhance views. To restore roadside character continuity through blending with adjacent land use: continue roadside design scale through blended area; design for visual continuity throughout character segment. Select vegetation and design planting density to achieve desired degree of blending and/or to meet screen/enclosure objectives by the tenth year after construction. <p><u>Structure</u></p> <ul style="list-style-type: none"> Design structures to provide visual continuity, in coordination with other structures within the roadway corridor. Structural screens/fences may be used to screen views where right of way is limited. Consider scenic views in design of structures. Use vegetation to enhance architectural elements. 	<p>Use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments.</p> <p>(Includes all guidelines in Treatment Level 2, except where superseded by Treatment Level 3 guidelines.)</p> <ul style="list-style-type: none"> Consider the purchase of additional right of way, the purchase of development rights, and/or the development of partnerships for future screening/buffering and/or environmental functions as adjacent land uses change. <p><u>Vegetation</u></p> <ul style="list-style-type: none"> Plant trees of up to 3 inches in caliper in pedestrian areas; areas of Zone 2 that cannot be mowed may be planted with shrubs and groundcovers. Irrigated lawns may be used in pedestrian areas. Select vegetation and design planting density to achieve desired degree of blending and/or to meet screen/enclosure objectives by the seventh year after construction or initial management action. <p><u>Structure</u></p> <ul style="list-style-type: none"> Consider the use of traffic barriers to reduce tree setback limits where right of way is narrow and screening is essential.

Table V

Roadside Guidelines

Urban Roadside Character

A roadside classified as urban is characterized by elements that mirror the character of adjacent land use. Vegetation is predominantly non-native (ornamental) trees, shrubs, and groundcover, with remnants of native vegetation. There is a consistent, refined appearance throughout all management zones. Structures are coordinated for visual continuity throughout the corridor. Special attention is given to architectural detail.

Treatment Level 1	Treatment Level 2	Treatment Level 3
<p>In addition to safety and operational criteria, use maintenance activities only, including Integrated Vegetation Management (IVM), to restore the roadside to the designated roadside character.</p> <p>(The maintenance budget is financially responsible for these activities.)</p> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Manage vegetation to meet the requirements of operational, environmental, and visual functions with minimal maintenance. • Manage for roadside character continuity; keep level of maintenance consistent throughout each roadside character segment. • Limit the width of Zone 1 as much as possible. • Manage the transition of construction clearing edges to minimize visual impact. • Manage vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Manage to achieve desired degree of blending and/or to meet screen/enclosure objectives. • Manage the roadside area within any overhead utility corridor to exclude vegetation that will interfere with the utility. • Use IVM to screen visual distractions and undesirable views. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Preserve original architectural design intent. • Manage vegetation to soften the appearance of structures. 	<p>Use construction activities within the construction limits of the project (including construction easements) to restore the roadside to the designated roadside character.</p> <p>[Does not apply under Preservation programs, the Safety Improvement Program (I2), or the Environmental Retrofit Program (I4), except where that type of work disturbs the roadside. The corresponding program (Preservation, Safety, or Environmental Retrofit) will then be financially responsible to restore the disturbed area only.]</p> <ul style="list-style-type: none"> • Restore operational, environmental, and visual functions. Where possible, work with land use agencies and adjacent land owners to preserve and establish buffer zones. • Design all management zones to facilitate maintenance activities. <p><u>Landform</u></p> <ul style="list-style-type: none"> • Adjust grading limits to protect desirable vegetation, natural habitat, wetlands and sensitive areas, and heritage resources. • Design landforms to reflect urban architecture. • Design slopes and drainage to manage stormwater runoff, minimize erosion, and achieve slope stability. • Where cost-effective, save topsoil for redistribution. <p><u>Vegetation</u></p> <p>In coordination with IVM goals:</p> <ul style="list-style-type: none"> • Minimize site disturbances to protect native plant communities and specimen trees. • Zone 2: Seed graded and disturbed areas with erosion control seeding mixture; shrubs and groundcovers may be planted. Calculate plant spacing as below. • Zone 3: In conjunction with erosion control measures, restore roadside character with trees (conifers up to 6 feet in height, and deciduous trees up to 2 inches in caliper), and shrubs; plant trees of up to 3 inches in caliper in pedestrian areas; calculate plant spacing based on site conditions, expected plant survival rate, and density required to discourage establishment of undesirable species. <ul style="list-style-type: none"> • Incorporate planned/existing local street tree programs into roadside plans. • Use temporary irrigation for plant establishment where necessary; design permanent irrigation where unavoidable. • Select vegetation to control stormwater runoff, minimize erosion, and achieve slope stability. • Select and locate plant material to facilitate driver guidance and screen visual distractions and undesirable views. • Locate plantings to enhance desirable views. • To restore roadside character continuity through blending adjacent land use: continue roadside design scale through blended area; design for visual continuity throughout character segment. • Select vegetation and design planting density to achieve desired degree of blending or to meet screen/enclosure objectives by seventh year after construction. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Design structures to provide visual continuity and enhance the urban environment; give special attention to architectural detail. • Structural screens/fences may be used to screen views where right of way is limited. • Consider scenic views when locating signs. • Use vegetation to enhance architectural elements. 	<p>Use construction activities to accelerate restoration of the roadside to the designated roadside character and to fulfill additional environmental requirements and/or public commitments.</p> <p>(Includes all guidelines in Treatment Level 2, except where superseded by Treatment Level 3 guidelines.)</p> <ul style="list-style-type: none"> • Consider the purchase of additional right of way, the purchase of development rights, and/or the development of partnerships for future screening/buffering and/or environmental functions as adjacent land uses change. <p><u>Vegetation</u></p> <ul style="list-style-type: none"> • Groundcovers may be planted in Zones 2 and 3. • Irrigated lawns may be used in pedestrian areas. • Select vegetation, design planting density, and manage to achieve desired degree of blending and/or to meet screen/enclosure objectives by the fifth year after construction or initial management action. <p><u>Structure</u></p> <ul style="list-style-type: none"> • Consider the use of traffic barriers to reduce tree setback limits where right of way is narrow and screening is essential.