

**AGENDA
JOINT DAYTON CITY COUNCIL/
PLANNING COMMISSION WORK SESSION**



DATE: MONDAY, NOVEMBER 09, 2022
TIME: 6:30 PM
PLACE: DAYTON CITY HALL ANNEX – 408 FERRY STREET, DAYTON, OREGON
VIRTUAL: ZOOM MEETING – ORS 192.670/HB 2560

You may join the Council Meeting online via Zoom Meeting at: <https://us06web.zoom.us/j/82560540341>
or you can call in and listen via Zoom: 1 346 248-7799 or 1 720 707-2699

Dayton – Rich in History . . . Envisioning Our Future

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PAGE #</u>
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A. CALL TO ORDER & PLEDGE OF ALLEGIANCE

B. ROLL CALL

C. APPEARANCE OF INTERESTED CITIZENS

The public is strongly encouraged to relay concerns and comments to the Council in one of the following ways:

- Email - at any time up to 5 pm the day of the meeting to pringnalda@ci.dayton.or.us. The mayor will read the comments emailed to the City Recorder.
- Appear in person – If you would like to speak during public comment please sign-up on the sign-in sheet located on the table when you enter the Council Chambers.
- Appear by Telephone only – please sign up prior to the meeting by emailing the City Recorder at pringnalda@ci.dayton.or.us the chat function is not available when calling by phone into Zoom
- Appear via Zoom, Virtually – once in the meeting send a chat directly to the City Recorder, Patty Ringnalda, use the raise hand feature in Zoom to request to speak during public comment, you must give the City Recorder your First and Last Name, Address and Contact Information (email or phone number) before you are allowed to speak.

When it is your turn the Mayor will announce your name and unmute your mic.

D. ACTION ITEMS

- | | |
|--|------|
| 1. Development Code Amendments for Buffer between EFU and Urban uses | 1-35 |
|--|------|

E. CITY COUNCIL COMMENTS/CONCERNS

F. ADJOURN

Posted: November 04, 2022
By: Melissa York, Office Specialist II

NEXT MEETING DATES

City Council Regular Session, Monday, December 5, 2022
Virtually via Zoom and in Person; City Hall Annex, 408 Ferry Street, Dayton, Oregon

To: Dayton Planning Commission, Dayton City Council

From: Kiel Jenkins, City Council

Re: Development Code Amendments for Buffers between EFU and Urban uses

Date: 9 November 2022

I. Background

In June 2022, The City of Dayton and the Yamhill County Board of Commissioners approved the City's proposal for an Urban Growth Boundary Land Swap. Concurrently, the City Council approved CPA 2022-01, which added the following comprehensive plan text amendment to the urbanization element of the Dayton Comprehensive Plan, requiring the City of Dayton to proceed with a development code amendment adding a buffer between urban and rural uses prior to future annexations:

Goals

- 1. To provide for an orderly and efficient transition from rural to urban land use,*
- 2. To ensure a compact urban growth pattern.*
- 3. To recognize the importance of the adjacent farmland and the rural farm community to the local economy and larger Dayton and Yamhill County Community.*

Policies

- 1. The City shall define a growth policy consistent with population projections and expectations and identify possible future development areas on the Plan map.*
- 2. The City shall encourage the availability of sufficient land for various urban uses to ensure choices in the marketplace.*
- 3. The City shall efficiently utilize existing facilities and services by permitting infilling of existing, substandard residential lots.*
- 4. Methods and devices the City shall consider for guiding urban land uses include the multiple use and joint development practices and capital improvement programming.*
- 5. The City and Yamhill County shall mutually adopt an urban growth boundary management agreement for the purpose of guiding urbanization for those County lands located inside the boundary.*
- 6. Change of the urban growth boundary shall be based upon consideration of the following factors:*
 - a. Demonstrated need to accommodate large range urban growth requirements;*
 - b. Need for housing, employment opportunities and livability;*
 - c. Orderly and economic provision of public facilities and services;*

d. Maximum efficiency of land uses within and on the fringe of the existing urban area; e. Retention of agricultural land until needed for development;

f. Environmental, energy, economic and social consequences; and

g. Compatibility between the proposed urban uses and nearby agricultural activities. The City of Dayton shall consider the impact on farmland in any decisions regarding and alteration or expansion of the Urban Growth Boundary.

h. The City of Dayton shall require buffers for new urban development adjacent (including land across public or private right-of-ways) to land designated by Yamhill County as Exclusive Farm Use to mitigate potential conflicts with farm uses. The City shall also require a deed statement recognizing that farm uses shall not be forced to change practices due to the presence of urban uses consistent with ORS 30.390. Zoning Ordinance amendments implementing this policy will be adopted before any affected land is annexed into the City.

When City staff prepared the amendments, the intent was to leave the revised policy open ended to allow the Planning Commission and City Council adequate leeway to evaluate different buffer possibilities. The City, via the development code amendment process, will now proceed with implementing the revised policies.

II. Examples

The task for the Planning Commission and City Council is to develop a set of code amendments that:

1. Adequately implements Policies g and h of the Urbanization element of the City of Dayton Comprehensive Plan.
2. Adds a buffer requirement that protects adjacent farmland from urban uses while ensuring the buffer requirement is not overly intrusive on property owners looking to develop land within the Urban Growth Boundary.

One method for developing a suitable buffer requirement is reviewing buffer requirements for industrial zones in urban areas. Cities typically require strict setback and buffer requirements between residential and industrial areas, which can be used as a basis for creating a set of buffer requirements between urban and rural areas. Staff have provided a comparison of industrial zone standards (Exhibit A) for review. The three columns in the right of the table show setback requirements for various Oregon cities. In particular, staff recommends the PC and CC specifically review the setback requirements for industrial zones abutting residential districts.

The USDA also provides a set of recommendations for buffers between agricultural land and urban uses (Exhibit B). Among the relevant recommendations noted in the guide are:

1. Density of buffer can offer more protection than pure size.
2. Topography can be used as a buffer where possible.
3. Mature plantings should be used within a buffer.
4. Buffers can be used for active recreation where possible

5. Evergreens are more highly recommended than deciduous trees due to the fact that they provide protection through the winter months.

Lastly, staff has provided a link to an [article](#) from “Sustainable City Code,” which provides a description of some of the common agricultural buffer requirements, along with links to various development codes around the Country containing buffer requirements.

III. Discussion Points / Elements to Consider

1. Differentiating between buffer requirements for residential, commercial, and industrial urban uses.
2. Width of the buffer vs. buffer elements.
3. Balancing buffer requirement with maintaining base of developable land.
4. Ensuring buffer requirement does not make development economically unfeasible.
5. Ensuring buffer requirement is clear and objective.
6. Community input.

IV. Work Session Goals

The primary goal of the work session is for the Planning Commission and City Council to determine a general outline for staff to use in drafting the code amendment using the resources provided. There does not necessarily need to be any specifics discussed, but staff will be looking to understand and receive direction on what the Commission and Council view as priorities for the development of the amendments.

If the Planning Commission and City Council wish to obtain additional information before proceeding with the issuance of a staff directive to prepare amendments to the Dayton Land use and Development Code.

V. Next Steps

Under direction from the Planning Commission and City Council, staff will either schedule a second work session or move forward with hearings-ready amendments package.

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Comparison of Industrial Zone Development Standards									
City	Zone	Lot Area (Minimum)	Lot Width (Minimum)	Lot Coverage (Maximum)	Height (Maximum)	Front Yard Setback (Minimum)	Side Yard Setback (Minimum)	Rear Yard Setback (Minimum)	
1	Albany	None	None	None	None	15'	40' abutting R District	40' abutting R District	
2	Albany	3 acres	None	80%	50'	15'	30' abutting R District	30' abutting R District	
3	Albany	None	None	None	None	15'	50'	50'	
4	Corvallis	None	None	None	45'	25' (each boundary line abutting any R District)/20' along collector streets	25' (each boundary line abutting any R District)/20' along collector streets	25' (each boundary line abutting any R District)/20' along collector streets	
5	Corvallis	None	None	None	75'	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	
6	Corvallis	None	None	None	75'	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	100' (from any R property line), off-street parking allowed in setback except first 35' (from R property line), 40' along collector street	
7	Cottage Grove	None	None	80%	35'	20'	20' (abutting R District)	20' (abutting R District)	
8	Cottage Grove	None	None	80%	35'	10'	20' (abutting R District)	20' (abutting R District)	
9	Cottage Grove	None	None	70%	None	25' arterial, 20' collector, 15' local street	20' (abutting R District)	20' (abutting R District)	
10	Dallas	None	None	None	60'	20'	20' (abutting R District)	40' (abutting R District)	
11	Gretna, LA	None	None	None	45'	None	None	None	
12	Gretna, LA	10,000 sf	None	None	35'	25'	25' (abutting R District)	25'	
13	Hood River	None	20'	None	45'	None	None	None	
14	Hood River	None	20'	None	45'	None	None	None	
15	Junction City	None	None	None	35' (within 150' of R District)	50' (abutting R District), 25' (abutting R District) if solid screen is provided	50' (abutting R District), 25' (abutting R District) if solid screen is provided	50' (abutting R District), 25' (abutting R District) if solid screen is provided	
16	Junction City	None	None	None	35' (within 150' of R District)	50' (abutting R District), 25' (abutting R District) if solid screen is provided	50' (abutting R District), 25' (abutting R District) if solid screen is provided	50' (abutting R District), 25' (abutting R District) if solid screen is provided	
17	Molalla	15,000 sf	None	85%	45'	20'	10'	10'	

City	Zone	Lot Area (Minimum)	Lot Width (Minimum)	Lot Coverage (Maximum)	Height (Maximum)	Front Yard Setback (Minimum)	Side Yard Setback (Minimum)	Rear Yard Setback (Minimum)
18	Molalla	25,000 sf	None	85%	45'	20'	10'	10'
19	Monmouth	5,000 sf	50'		45'	20'	10'	10'
20	Monmouth	10,000 sf	None		45'	20'	10'	10'
21	Monmouth	None	None		45'	30' (on collector)	20' (adjoining R district)	20' (adjoining R district)
22	Silverton	None	None	90%	45'	20'	30' (abutting R District)	30' (abutting R District)
23	Silverton	None	None	85%	None	10'	30' (abutting R District)	30' (abutting R District)
24	Silverton	None	None	85%	None	10'	30' (abutting R District)	30' (abutting R District)
25	Stayton	None	None	None	May be est. by SDR	0	0	0
26	Stayton	None	None	None	May be est. by SDR	0	May be est. by SDR	May be est. by SDR
27	Stayton	5 acres	None	None	May be est. by SDR	0	May be est. by SDR	10' when adjacent to R district, or may be est. by SDR
28	Sutherlin	None	None	70%	35'	20'	25' (abutting R District)	40' (abutting R District)
29	Sutherlin	None	None	80%	35'	20'	25' (abutting R District)	40' (abutting R District)
30	Sweet Home	None	None	50%	None	20'	20' (abutting R District)	20' (abutting R District)
31	Eugene	None	None	None	None	0	20' (abutting R District)	20' (abutting R District)
32	Eugene	None	None	None	None	0	20' (abutting R District)	20' (abutting R District)
33	Salem	None	None	None	70'	30' (abutting R District)	30' (abutting R District)	30' (abutting R District)
34	Salem	None	None	None	45'	30' (abutting R District)	30' (abutting R District)	30' (abutting R District)
35	Salem	None	None	None	70'	40' (abutting R District)	40' (abutting R District)	40' (abutting R District)
36	Salem	None	None	None	70'	40' (abutting R District)	40' (abutting R District)	40' (abutting R District)
37	Gresham	None	None	None	None	20'	None	None
38	Gresham	None	None	None	None	20'	None	None
39	Hillsboro	None	None	None	45'	1'	None	None
40	Hillsboro	None	None	None	None	35'	25' (abutting R District)	25' (abutting R District)
41	Beaverton	None	None	None	45'	75' (abutting R District)	75' (abutting R District)	75' (abutting R District)
42	Bend	None	None	80%	50'	10'	20' (abutting R District), one-half foot for each foot by which the building exceeds 35'	20' (abutting R District), one-half foot for each foot by which the building exceeds 35'
43	Bend	None	None	80%	50'	10'	20' (abutting R District), one-half foot for each foot by which the building exceeds 35'	20' (abutting R District), one-half foot for each foot by which the building exceeds 35'
44	Springfield	10,000 sf	75'		50'	10'	10' (abutting R District)	10' (abutting R District)
45	Springfield	10,000 sf	75'		50'	10'	10' (abutting R District)	10' (abutting R District)
46	Tigard	None	50'	85%	45'	30'	50' (abutting R District)	50' (abutting R District)

City	Zone	Lot Area (Minimum)	Lot Width (Minimum)	Lot Coverage (Maximum)	Height (Maximum)	Front Yard Setback (Minimum)	Side Yard Setback (Minimum)	Rear Yard Setback (Minimum)
47	Tigard	None	50'	85%	45'	30'	50' (abutting R District)	50' (abutting R District)
48	Tigard	None	50'	85%	45'	30'	50' (abutting R District)	50' (abutting R District)
49	Oregon City	None		75%	40'	10'	25' (abutting R District)	25' (abutting R District)
50	McMinnville	Limited Light Industrial			60'	None	20' (abutting R District)	20' (abutting R District)
51	McMinnville	Light Industrial			80'	15' (abutting public road)	40' (abutting R District)	40' (abutting R District)
52	McMinnville	General Industrial			80'	None	50' (abutting R District)	50' (abutting R District)
53	Redmond	Light Industrial	None	60% (abutting R District)	60'	25' (collector)	10' (1-2 story building, 15' (3 story building)/25' (collector)	25' (collector)
54	Redmond	Heavy Industrial	None	60% (abutting R District)	60'	25' (collector)	10' (1-2 story building, 15' (3 story building)/25' (collector)	25' (collector)
55	Tualatin	Light Industrial	20,000 sf		50'	50' (across the street from R District)	50' (adjacent to or across street from R District)	50' (adjacent to or across street from R District)
56	Tualatin	General Industrial	20,000 sf		50'	50' (across the street from R District)	50' (adjacent to or across street from R District)	50' (adjacent to or across street from R District)
57	West Linn	General Industrial	50'	50%	35' (100' from R District)	Same as R District - 20'	Same as R District - 5' interior/15' street side	Same as R District - 20'
58	Woodburn	Light Industrial	None	None	70'	10'	30' (abutting R District)	30' (abutting R District)
59	Woodburn	Industrial Park	None	None	70'	10'	30' (abutting R District)	30' (abutting R District)
60	Forest Grove	Light Industrial	10,000 sf	None	None	None	None	None
61	Forest Grove	General Industrial	10,000 sf	None	None	None	None	None
62	Forest Grove	Industrial Park	20,000 sf	50%	45'	20'	10'	10'
63	Newberg	Limited industrial	20,000 sf	None		20' (collector)	10' (abutting R District)	10' (abutting R District)
64	Newberg	Light Industrial	20,000 sf	None		20' (collector)	10' (abutting R District)	10' (abutting R District)
64	Newberg	Heavy Industrial	20,000 sf	None		20' (collector)	10' (abutting R District)	10' (abutting R District)
65	Roseburg	Light Industrial	None	None	35' (abutting R District)	None	None	None
66	Roseburg	Medium Industrial	None	None	35' (abutting R District)	None	None	None
67	Roseburg	Heavy Industrial	None	None	35' (abutting R District)	None	None	None
68	Sherwood	Light Industrial	10,000 sf	None	Within 100' of R District, restricted to height of R Zone	20'	40' (abutting R District)	40' (abutting R District)
69	Sherwood	General Industrial	10,000 sf	None	Within 100' of R District, restricted to height of R Zone	None	50' (abutting R District)	50' (abutting R District)
70	Hermiston	Light Industrial	None	None	35' (within 150' of R District)	50' or 25' with screening (abutting R District)	50' or 25' with screening (abutting R District)	50' or 25' with screening (abutting R District)
71	Hermiston	Heavy Industrial	None	None	35' (within 150' of R District)	50' or 25' with screening (abutting R District)	50' or 25' with screening (abutting R District)	50' or 25' with screening (abutting R District)
72	Happy Valley	Employment_Center	None	85%	45'	10'	0' interior/10' street side	20' (abutting R District)

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6. Aesthetics and Visual Quality

Objectives

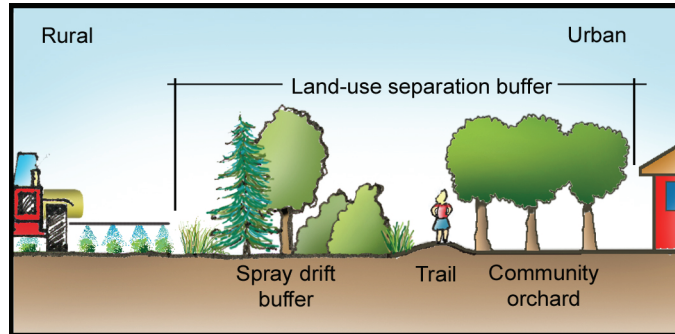
- Enhance visual quality
- Control noise levels
- Control air pollutants and odor

Buffer functions

1. Enhance visual interest
2. Screen undesirable views
3. Screen undesirable noise
4. Filter air pollutants and odors
5. Separate human activities

Design Guidelines for Aesthetics and Visual Quality	Buffer Functions				
	Enhance visual interest	Screen views	Screen undesirable noise	Filter air pollutants and odors	Separate human activities
6.1 Rural-urban land use buffer	✓	✓	✓	✓	✓
6.2 Windbreaks for odor control				✓	✓
6.3 Air quality buffers				✓	✓
6.4 Buffers for noise control			✓		✓
6.5 Developing an ecological aesthetic	✓				✓
6.6 Attractive roadside corridors	✓	✓	✓	✓	✓
6.7 Buffers for visual screening			✓		✓

Additional Design Guidelines that may Benefit Aesthetics and Visual Quality	Buffer Functions				
	Enhance visual interest	Screen views	Screen undesirable noise	Filter air pollutants and odors	Separate human activities
2.1 Matrix primer	✓				
2.3 Corridors and connectivity	✓	✓	✓	✓	✓
2.9 Corridor width	✓	✓	✓	✓	✓
2.13 Roads and wildlife crossings	✓				✓
2.14 Roadside corridors	✓	✓	✓	✓	✓
3.2 Windbreaks for wind erosion	✓			✓	✓
3.3 Herbaceous wind barriers	✓			✓	✓
4.10 Greenways and property values	✓	✓	✓	✓	✓
5.1 Managing insect pests with buffers					✓
5.3 Buffers and spray drift				✓	✓
5.4 Weed control with buffers					✓
5.7 Managing drifting snow					✓
5.8 Windbreaks for livestock			✓	✓	✓



6.1 Rural-urban land use buffer

The rural-urban interface is often a zone of tension due to conflicting land uses and management. Use buffers to serve as a physical barrier between these land uses and to provide multiple benefits. Design the buffers to minimize the contentious issues (e.g., spray drift, noise, odor) while providing amenities (e.g., trails, community gardens).

6.1 References

- Arendt, R. 2004. Linked landscapes creating greenway corridors through conservation subdivision design strategies in the northeastern and central United States. *Landscape and Urban Planning*. 68: 241-269.
- Brush, R.; Chenoweth, R.E.; Barman, T. 2000. Group differences in the enjoyability of driving through rural landscapes. *Landscape and Urban Planning*. 47 :39-45.
- Dwyer, J.F.; Schroeder, H.W.; Gobster, P.H. 1991. The significance of urban trees and forests: towards a deeper understanding of values. *Journal of Arboriculture*. 17: 276-284.
- Erickson, D.L.; Ryan, R.L., De Young, R. 2002. Woodlots in the rural landscape: landowner motivations and management attitudes in a Michigan case study. *Landscape and Urban Planning*. 58: 101-112.
- Kuo, F.E. 2001. Coping with poverty: impacts of environment and attention in the inner city. *Environment and Behavior*. 33: 5-34.
- McPherson, G. 1988. Functions of buffer plantings in urban environments. *Agriculture, Ecosystems and Environment*. 22/23: 281-298.
- Nassauer, J.I. 1993. Ecological function and the perception of suburban residential landscapes. In: Gobster, R., ed. *Managing urban and high-use*

6.1 Aesthetics and Visual Quality

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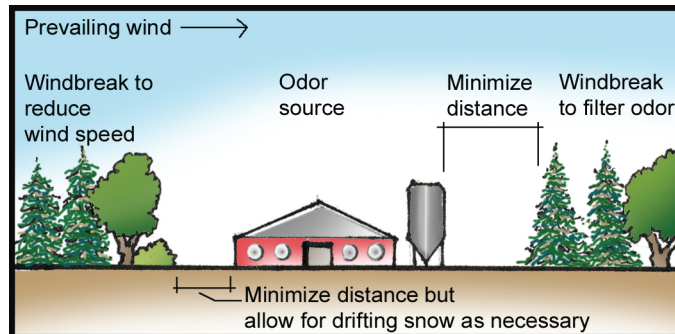
Schoeneberger, M.M.; Bentrup, G.; Francis, C.F. 2001. Ecobelts: reconnecting agriculture and communities. In: Flora, C.B., ed. Interactions between agroecosystems and rural human communities. Boca Raton, FL: CRC Press. 239-260 p.

Smardon, R.C. 1988. Perception and aesthetics of the urban environment: review of the role of vegetation. *Landscape and Urban Planning*. 15: 86-106.

Sullivan, W.C. 1994. Perceptions of the rural-urban fringe: citizen preferences for natural and developed settings. *Landscape and Urban Planning*. 29: 85-101.

Sullivan, W.C.; Anderson, O.M.; Lovell, S.T. 2004. Agricultural buffers at the rural-urban fringe: an examination of approval by farmers, residents, and academics in the Midwestern United States. *Landscape and Urban Planning*. 69: 299-313.

6.1 Aesthetics and Visual Quality



6.2 Windbreaks for odor control

Windbreaks can reduce odors from livestock and sewage facilities and other odor-producing sources. Plant buffers with a mixture of tall trees and shrubs, particularly conifers, close to the odor source. Strive for 50 to 65 percent density. A windbreak system around the perimeter is often desirable. See section 6.3 for additional guidelines.

6.2 References

- Beckett, K.P.; Freer-Smith, P.; Taylor, G. 1998. Urban woodlands: their role in reducing the effects of particulate pollution. *Environmental Pollution*. 99: 347-360.
- Beckett, K.P.; Freer-Smith, P.; Taylor, G. 2000. The capture of particulate pollution by trees at five contrasting urban sites. *Arboricultural Journal*. 24: 209-230.
- Beckett, K.P.; Freer-Smith, P.; Taylor, G. 2000. Particulate pollution capture by urban trees: effect of species and windspeed. *Global Change Biology*. 6: 995-1003.
- Bennett, J.H.; Hill, A.C. 1973. Absorption of gaseous air pollutants by a standardized canopy. *Journal of Air Pollution Control Association*. 23: 203-206.
- Elkley, T.; Ormond, D.P.; Marie, B. 1982. Foliar sorption of sulfur dioxide, nitrogen dioxide, and ozone by ornamental woody plants. *Horticultural Science*. 17: 358-360.
- Hill, A.C. 1971. Vegetation: a sink for atmospheric pollutants. *Journal of Air Pollution Control Association*. 21: 341-346.
- Khan, F.I.; Abbasi, S.A. 2000. Attenuation of gaseous pollutants by greenbelts. *Environmental Monitoring and Assessment* 64: 457-475.

6.2 Aesthetics and Visual Quality

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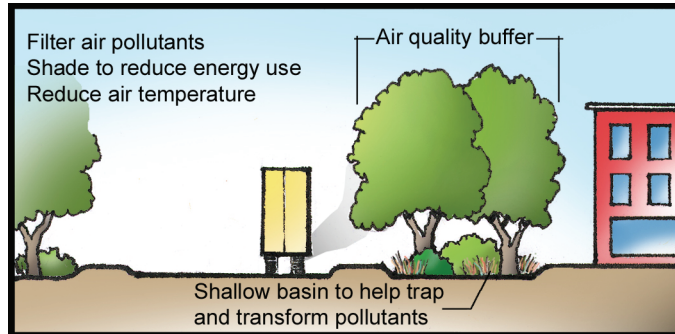
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Tyndall, J.; Colletti, J. 2000. Air quality and shelterbelts: odor mitigation and livestock production literature review. Ames, IA: Iowa State University, Forestry Department. 74 p.

Tyndall, J.; Colletti, J. 2007. Mitigating swine odor with strategically designed shelterbelt systems: a review. *Agroforestry Systems*. 69: 45-65.

Welke, B.; Ettliger, K.; Riederer, M. 1998. Sorption of volatile organic chemicals in plant surfaces. *Environmental Science and Technology*. 32: 1099-1104.

6.2 Aesthetics and Visual Quality



6.3 Air Quality Buffers

Vegetation in buffers can affect local and regional air quality in three main ways: temperature reduction, removal of air pollutants, and energy effects on buildings.

Temperature reduction: Lower air temperature due to trees and other vegetation can reduce emissions of many temperature-dependent pollutants.

Removal of air pollutants: Plants remove air pollutants by uptake via leaves and by intercepting airborne particles. Pollutants captured by vegetation are often transferred to the soil. While soils and plants will render some pollutants nontoxic, the final destination, form, and impact of the pollutants should be considered.

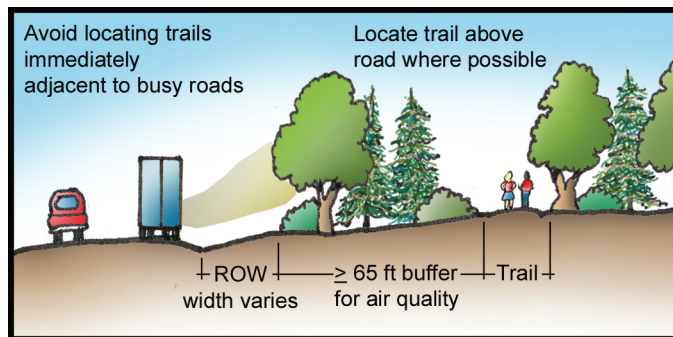
Energy effects on buildings. Trees reduce building energy use, lowering pollutant emissions from power plants.



A 65 to 600 ft wide buffer may reduce particulate pollution by 40 to 75 percent although many factors will affect pollutant removal

Key design considerations

- Consider meteorological, topographical, and other landscape-scale factors in locating buffers (e.g., timing of pollution, high concentration spots).
- Plant buffers around and close to air pollution sources.
- Moderately dense buffers are best for pollutant removal.
- Use trees, shrubs, and grasses for multi-level trapping.
- Plant buffers in energy conserving locations (see sections 4.7 to 4.8).



Plant selection criteria for air pollutant removal

- Evergreen trees can remove more pollutants however many conifer species are sensitive to common pollutants.
- Select plants with dense branching and twig structure.
- Leaves with hairy, resinous, and coarse surfaces capture more particles than smooth leaves. Smaller leaves are generally more efficient collectors than larger leaves.
- Herbaceous species may adsorb more gaseous pollutants.
- Use multiple species to minimize risks with low diversity.
- Use long-lived species that require minimal maintenance.
- Select species with pest and disease resistance.
- Select species suitable for the site (e.g., urban environments often have compacted and droughty soils).

6.3 References

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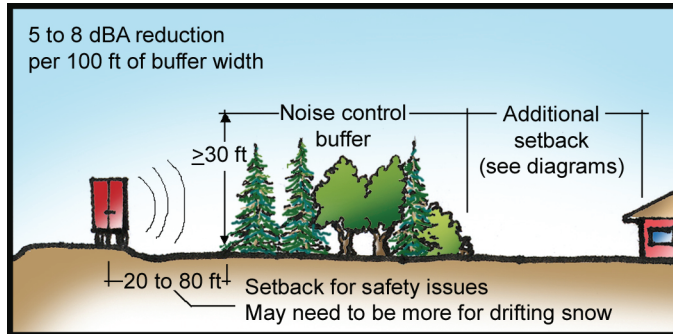
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6.4 Buffers for noise control

Buffers can reduce noise from roads and other sources to levels that allow normal outdoor activities to occur. A 100-foot wide planted buffer will reduce noise by 5 to 8 decibels (dBA). Using a barrier in the buffer such as a landform can significantly increase buffer effectiveness (10 to 15 dBA reduction per 100-foot wide buffer with 12-foot high landform).

Guidelines are provided below for roads. Use the diagrams on the adjacent page to estimate a setback distance from a typical 100-foot wide buffer to achieve an acceptable noise level.

Buffer Guidelines for Noise Reduction Along Roads	
Moderate Speed Road (<40 mph) Plant a 20 to 50-foot wide buffer with the near edge of the buffer within 20 to 50 feet of the center of the nearest traffic lane	High Speed Road (≥40 mph) Plant a 65 to 100-foot wide buffer with the near edge of the buffer within 50 to 80 feet of the center of the nearest traffic lane

Key design considerations

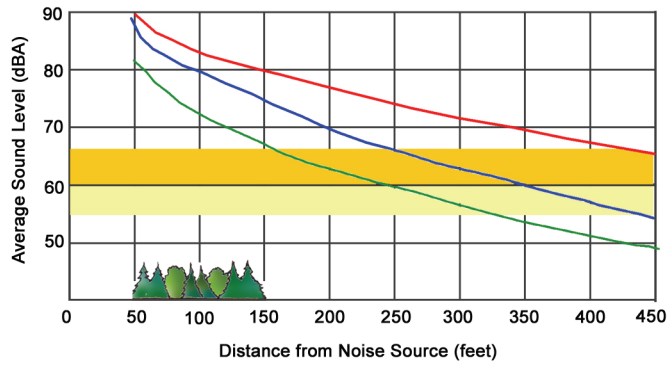
- Locate buffer close to the noise source while providing an appropriate setback for accidents and drifting snow.
- Evergreen species will offer year-around noise control.
- Create a dense buffer with trees and shrubs to prevent gaps.
- Select plants tolerant of air pollution and de-icing methods.
- Natural buffers will be less effective than planted buffers.
- Consider topography and use existing landforms as noise barriers where possible.

6.4 Aesthetics and Visual Quality

Estimating setback distance from noise control buffers

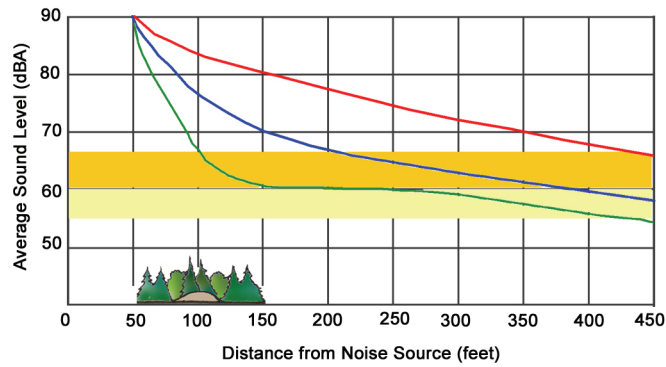
Example: An outdoor recreational site near a highway needs to be located to meet the desired noise levels of 60 to 65 dBA. If 100-ft wide tree/shrub buffer is used, the site needs to be 100 to 200 feet behind the buffer. The site can be located immediately behind the buffer if a 12-ft high landform is incorporated into the buffer.

Sound Level Decrease with Distance Due to Tree/Shrub Buffer



- Control - (No tree/shrub buffer - truck noise at 55 mph)
- Truck noise with 100-ft wide tree/shrub buffer
- Car noise with 100-ft wide tree/shrub buffer

Sound Level Decrease with Distance Due to Tree/Shrub and Landform Buffer



- Control - (No tree/shrub buffer - truck noise at 55 mph)
- Truck noise with 100-ft wide tree/shrub buffer & 4-ft high landform
- Truck noise with 100-ft wide tree/shrub buffer & 12-ft high landform

- 60 to 65 dBA acceptable noise levels for outdoor conversation
- 55 to 60 dBA acceptable noise levels for daytime residential areas

6.4 Aesthetics and Visual Quality

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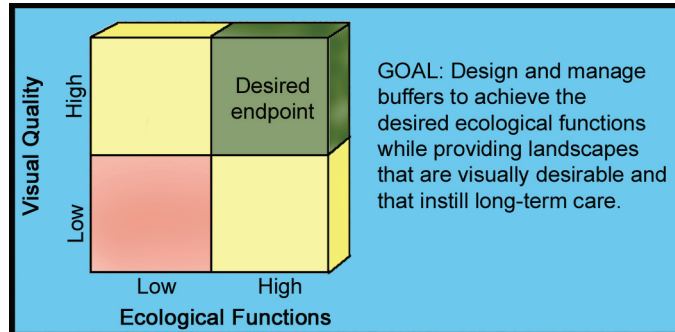
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6.4 Aesthetics and Visual Quality



6.5 Developing an ecological aesthetic

Many people, regardless of background, prefer similar visual elements in the landscape. Some of these include:

Commonly preferred visual elements

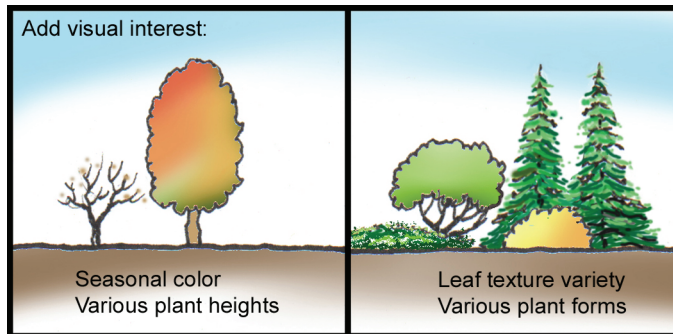
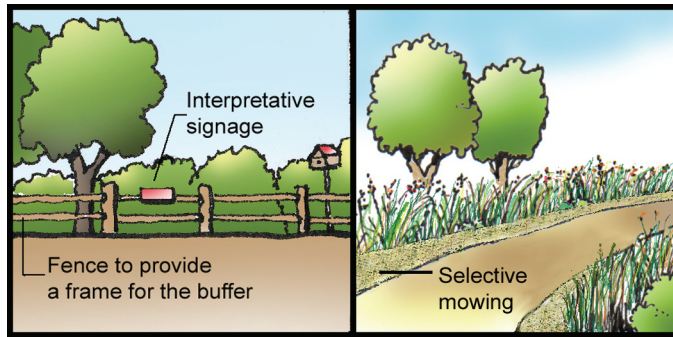
- Waterscapes (e.g., lakes, meandering streams)
- Manicured landscapes
- Savanna or park-like landscapes
- Trees in scale with surrounding features
- Absence of dead and downed wood
- Clean waterways with no or limited woody debris
- Large mature trees and trees with broad canopies
- Spaces defined by edges (e.g., pasture bordered by woods)

Some of these visual elements are not desirable for achieving goals such as water quality and wildlife habitat. Naturalistic landscapes providing valuable ecological functions are often viewed as untidy and undesirable, while manicured landscapes with limited ecological functions are perceived as demonstrating stewardship and are visually desirable.

The challenge is to design buffers that achieve the desired ecological functions while providing landscapes that are visually desirable and that instill long-term commitment. The next page provides strategies for addressing this challenge.

Strategies for enhancing visual preference of buffers

- Design the part of the buffer viewable by public to be visually pleasing while the interior can be designed to achieve the desired ecological functions.
- Use selective mowing to indicate stewardship without greatly reducing the ecological functions.
- Provide visual frames to contain and provide order around the buffer (e.g., wooden fence).
- Use interpretative signage and education programs to increase awareness and preference.
- Enhance visual interest and diversity by increasing seasonal color and by varying plant heights, textures, and forms.
- Provide simple habitat improvements such as nesting boxes and feeders. Wildlife usually increases visual preference.
- Use bold planting patterns to indicate a designed landscape.



6.5 Aesthetics and Visual Quality

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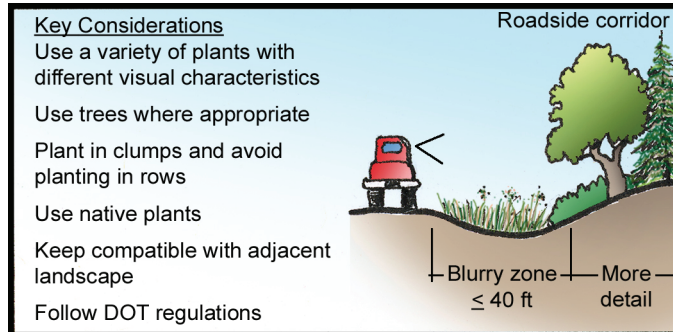
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6.5 Aesthetics and Visual Quality



6.6 Attractive roadside corridors

Roadside corridors can be designed and managed to create a pleasant driving environment, save maintenance costs, and reduce driver stress. Create visual interest with plant color, texture, form, and height. At speeds over 40 mph, the area that is greater than 40 feet from the side of the road will have more detail and will be more important visually. See sections 5.5 to 5.7.

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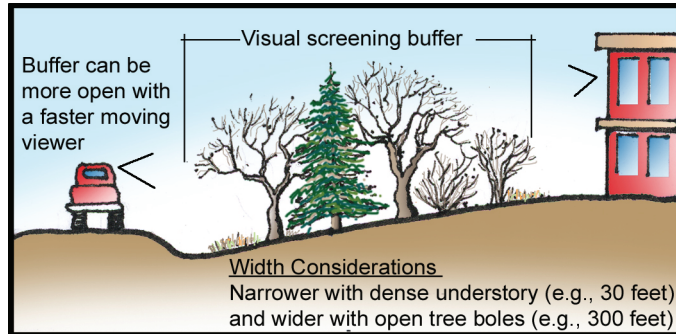
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6.6 Aesthetics and Visual Quality



6.7 Buffers for visual screening

Use dense and multi-layered vegetation, particularly shrubs to screen views. Deciduous plants provide 40 percent less screening than evergreens after leaf fall, so evergreens or a wider deciduous buffer may be necessary for screening year-round. Consider vegetation and viewpoint height in design.

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6.7 Aesthetics and Visual Quality

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City	Zone	Lot Area (Minimum)	Lot Width (Minimum)	Lot Coverage (Maximum)	Height (Maximum)	Front Yard Setback (Minimum)	Side Yard Setback (Minimum)	Rear Yard Setback (Minimum)
73	Happy Valley	Industrial Campus	None	75%	45'	10'	0' interior/10' street side	20' (abutting R District)
74	Troutdale	Light Industrial	None	None	45'	50' (from centerline of street when abutting R District)	50' (abutting R District)	50' (abutting R District)
75	Troutdale	General Industrial	None	None	None	50' (from centerline of street when abutting R District)	50' (abutting R District)	50' (abutting R District)
76	Troutdale	Industrial Park	None	50%	35'	20'	50' (abutting R District)	50' (abutting R District)
77	Canby	Light Industrial	5,000 sf	None	45'	20' (abutting arterial)	10' (abutting R District)	10' (abutting R District)
78	Canby	Heavy Industrial	5,000 sf	None	45'	20' (abutting R District)	20' (abutting R District)	20' (abutting R District)
79	Lebanon	Industrial	None	None	None	20'	20' (abutting R District)	20' (abutting R District)
80	The Dallas	Light Industrial	None	80%	70'	15'	30' (adjacent to R District)	30' (adjacent to R District)
81	St Helen	Light Industrial	None	None	75'	25' (from centerline of collector)	Same as R District - 25'	Same as R District - 25'
82	St Helen	Heavy Industrial	None	None	75'	25' (from centerline of collector)	Same as R District - 25'	Same as R District - 25'
83	Aurora	Light Industrial	None	None	Same as R District (when within 200' of R District)	25'	10 feet except 25 feet where abutting a public street	5 feet except 25 feet where abutting a public street
84	Aurora	Medium Industrial	None	None	Same as R District (when within 200' of R District)	25'	10 feet except 25 feet where abutting a public street	5 feet except 25 feet where abutting a public street
85	Aurora	Heavy Industrial	None	None	Same as R District (when within 200' of R District)	25'	10 feet except 25 feet where abutting a public street	5 feet except 25 feet where abutting a public street
86	Astoria	General Industrial	None	90%	45'	0	5' (abutting R District)	5' (abutting R District)
87	Prineville	Light Industrial	None	0	50'	20' (from collector)	20' (abutting R District)	20' (abutting R District)
88	Prineville	Heavy Industrial	None	0	50'	20' (from collector)	25' (abutting R District)	20' (abutting R District)
89	Prineville	Industrial Park	None	0%	45'	25' (from collector)	20' (abutting R District)	25' (abutting R District)