Woodard Creek Basin

Planned Trend Scenario

Vision

Woodard Basin develops fully under current zoning, development, and stormwater regulations

Population increases from 10,500 residents today to almost 15,000

Summary of Model Results

	Planned Trend	Future A	Future B
Hydrology	No change	No change	Small improvement
Temperature	No change	No change	Small improvement
Fecal Coliform	Small local increase	Small improvement	Improvement
Nitrate	Small improvement	Small improvement	Small improvement
Phosphorus	No change	No change	Improvement
Overall Benefit to Water Resources	Mixed	Small benefit	Moderate benefit

Conditions Improving ↑ ↓ Conditions Degrading

Land Use

- More forest and agricultural areas are converted to residential uses
  - The number of homes in the basin increases from approximately 4,880 to 7,660 (a 57% increase). This is the greatest increase among all the future scenarios
- New development occurs in a similar style and density as currently, subject to existing regulations
- No additional conservation requirements on agricultural lands
- No redevelopment along Martin Way

Impervious Surfaces & Forest

- As development occurs, some forested areas are converted to a mixture of hard surfaces (roofs, roads, driveways, patios) and other cleared areas (lawns)
  - Total impervious area in the basin increases to 22% (from ~15% currently)
  - Forest covers 34% of the basin, down from 80% historically

Stormwater & Septics

- Rainwater runoff from small storms requires little stormwater treatment
- Operation and maintenance requirements for homeowners in the Henderson Inlet Shellfish Protection District continue
- The number of septic systems in the basin decreases
  - Number of septics at high risk for contributing bacterial pollution decreases from 520 to 330 as properties within the city boundaries are connected to the sewer system
  - Number of septics at high risk for contributing nitrogen pollution decreases from 1,100 to 500 as properties within the city boundaries are connected to the sewer system

Environmental Outcomes

Water flow

- Water flow does not change substantially from current conditions

Water quality

- *Bacterial pollution:* Woodard Creek continues to fail water quality standards for fecal coliform; conditions degrade slightly in the urban area of the basin, but not substantially
- *Temperature:* Maximum temperatures in Woodard Creek regularly exceed the threshold for spawning salmon and trout habitat, and are especially warm in the urban areas
- *Nutrients:* Nitrate levels improve slightly, as more septic systems in the urban area are converted to sewer
- Phosphorus levels remain elevated in streams

Habitat & Wildlife

- Shellfish beds in Henderson Inlet could be impacted by continued bacteria pollution Shellfish beds in Eld Inlet could be impacted by continued bacteria/pollution

Legend

- City Limits
- Urban Growth Area
- Potential Dwelling Unit(s)
  Estimates are based on parcel's zoning, existing development and critical areas. Estimates are for planning purposes only; actual numbers are determined by City or County permitting staff.
- 2012 Aerial Images

Zoning

- Rural Residential (1 unit per 5 acres)
- Residential 1 unit per 2 acres
- Urban Single-family Residential
- Multifamily Residential
- Commercial or Professional
- Urban Center / Urban Mixed-use
- Industrial

Woodard Creek Basin

Future Alternative Scenario A

Vision

Woodard Basin balances low-impact development in the urban core while maintaining sensitive open spaces in rural areas

Summary of Model Results

	Planned Trend	Future A	Future B
Hydrology	No change	No change	Small improvement
Temperature	No change	No change	Small improvement
Fecal Coliform	Small local increase	Small improvement	Improvement
Nitrate	Small improvement	Small improvement	Small improvement
Phosphorus	No change	No change	Improvement
Overall Benefit to Water Resources	Mixed	Small benefit	Moderate benefit

Conditions Improving ↑ ↓ Conditions Degrading

Land Use

- In the north end of the basin, fewer forested and agricultural areas are converted to residential uses
  - The number of homes in the basin increases from approximately 4,880 to 7,330 (a 50% increase). This is around 330 fewer homes than predicted under the Planned Trend
  - Large parcels along the stream corridor (10-20+ acres) are designated for lower density development
- An area east of South Bay Rd is removed from Olympia's UGA and remains in the rural county and zoned for low density development
- New development in the basin meets a low-impact stormwater standard
- Larger parcels are preserved for farming and open space

Impervious Surfaces & Forest

- Less forested area is converted to cleared or hard surfaces
  - Total impervious area in the basin increases to 21%, greater than currently, but slightly less than Planned Trend
  - Forest cover remains approximately the same as today

Stormwater & Septics

- Rainwater runoff from small storms is dispersed and treated on site wherever feasible instead of flowing directly into Woodard Creek and Henderson Inlet
- There are more septic systems in the basin than under the Planned Trend, because an area removed from the UGA is not hooked up to sewer lines
  - Number of septics at high risk for contributing bacterial pollution increases from 330 to 350, but is fewer than today
  - Number of septics at high risk for contributing nitrogen pollution increases from 500 to 600, but is fewer than today

Environmental Outcomes

Water flow

- Water flow does not change substantially from current conditions

Water quality

- *Bacterial pollution:* Bacterial pollution is slightly reduced
- *Temperature:* Remains the same as Planned Trend
- *Nutrients:* Nitrate levels improve, slightly better than Planned Trend scenario in some areas, as fewer parcels are developed along the stream corridor

Very slight reduction in phosphorus loads, but not substantial improvement

Habitat & Wildlife

- In the northern, rural section of the basin, larger parcels, less dense development retains habitat and travel corridors for wildlife

Legend

- City Limits
- Urban Growth Area
- Potential Dwelling Unit(s)
  Estimates are based on parcel's zoning, existing development and critical areas. Estimates are for planning purposes only; actual numbers are determined by City or County permitting staff.
- 2012 Aerial Imagery

Possible Zoning Change

- to Residential 1/20
- Potential Area to Remove from UGA

Woodard Creek Basin

Future Alternative Scenario B

Vision

Woodard Creek Basin is a model for restoration through incentives and investments in habitat conservation and stormwater infrastructure

Summary of Model Results

	Planned Trend	Future A	Future B
Hydrology	No change	No change	Small improvement
Temperature	No change	No change	Small improvement
Fecal Coliform	Small local increase	Small improvement	Improvement
Nitrate	Small improvement	Small improvement	Small improvement
Phosphorus	No change	No change	Improvement
Overall Benefit to Water Resources	Mixed	Small benefit	Moderate benefit

Conditions Improving ↑ ↓ Conditions Degrading

Land Use

- Fewer forest and agricultural areas are converted to residential uses
  - Undeveloped parcels in sensitive areas are preserved through voluntary incentive programs (such as purchase of development rights)
- Increased education and outreach to landowners to encourage best management practices for healthy streams
- Area along Martin Way redevelops to provide more amenities and stormwater

Impervious Surfaces & Forest

- Total impervious area in the basin increases to 20%, greater than today, but less than Planned Trend or Alternative A. Runoff from these surfaces is more likely to be slowed and treated before entering a stream
- Wetland areas in the basin are restored, and provide more natural storage
- In the rural areas of the basin, vegetation along the stream channel is largely restored
  - Forest cover increases slightly to 38%

Stormwater & Septics

- Stormwater infrastructure along roads and in older neighborhoods is retrofitted to reduce runoff and provide more water quality treatment
- The cities of Olympia and Lacey and Thurston County partner to develop a regional stormwater treatment facility for runoff in the area surrounding Martin Way, Pacific Avenue and Interstate 5
- Septic systems in the basin continue to receive regular maintenance, and polluting septics are identified and repaired quickly

Environmental Outcomes

Water flow

- Minimum flows remain the same as today
- Stream flows become steadier as runoff enters streams more slowly

Water quality

- *Bacterial pollution:* Water quality violations from fecal coliform are greatly reduced
- *Temperature:* Restoration of vegetation along stream corridors reduces stream temperatures
- *Nutrients:* Nitrate and phosphorus levels are reduced

Habitat & Wildlife

- Aquatic creatures of all kinds (from stream bugs to fish) benefit from steadier flows, shaded stream corridors, and restored channels
- Shellfish beds in Henderson Inlet remain open and healthy

Legend

- City Limits
- Urban Growth Area
- Existing Wetlands
- Potential Wetland and Riparian Restoration Areas
- Potential Stormwater Retrofit Areas
- Stormwater Retrofit Study Selected Locations
- 2012 Aerial Images