Scenario Planning: Water Findings

Land Use Advisory Committee

METROPOLITAN COUNCIL

September 21, 2023

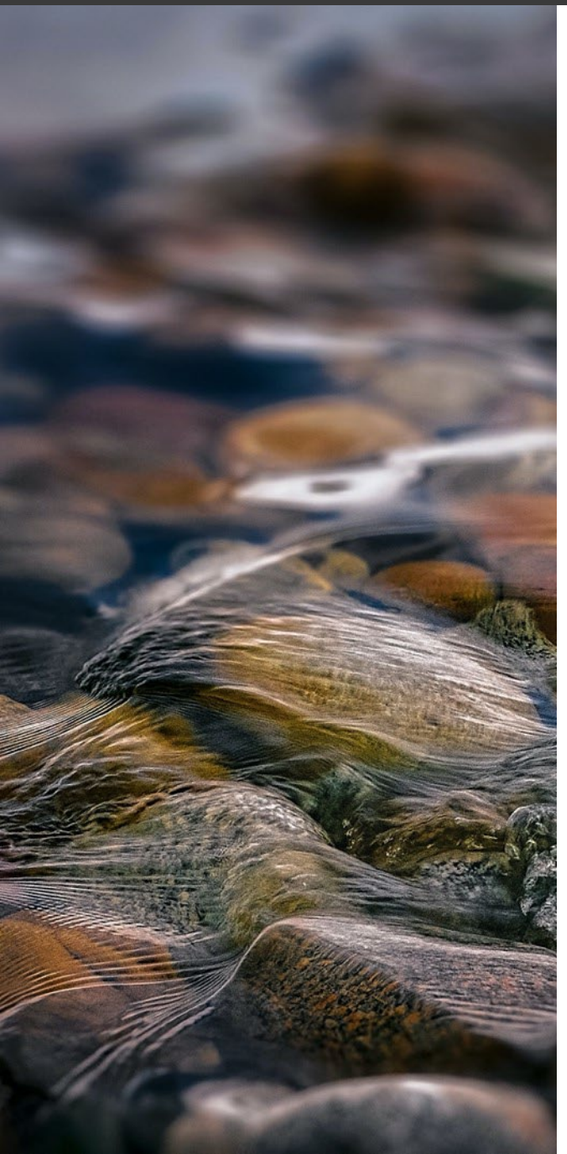
Kyle Colvin and Judy Sventek

Surface water scenario findings

Surface water findings

- One scenario is not universally “better” for surface water runoff. It depends on the pollutant of concern.
- Surface water impacts occur locally on small streams and lakes. Overall differences in scenario results at the metro scale don’t tell the whole story.
- Climate is likely to drive much bigger differences in surface water runoff than different land use scenarios will.

Connections to land use



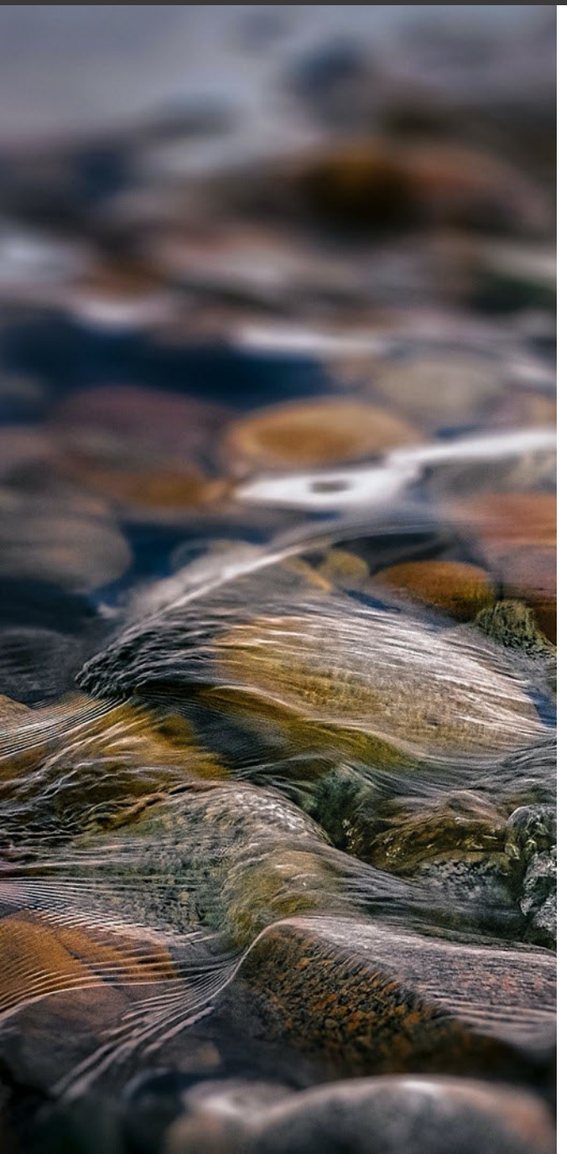
Single family residential (SFR) takes the most acres of new development.

Guidance should focus on ensuring new SFR is constructed to minimize water impacts.

Best management practices (BMPs) are key to offsetting impacts from development overall, regardless of scenario.

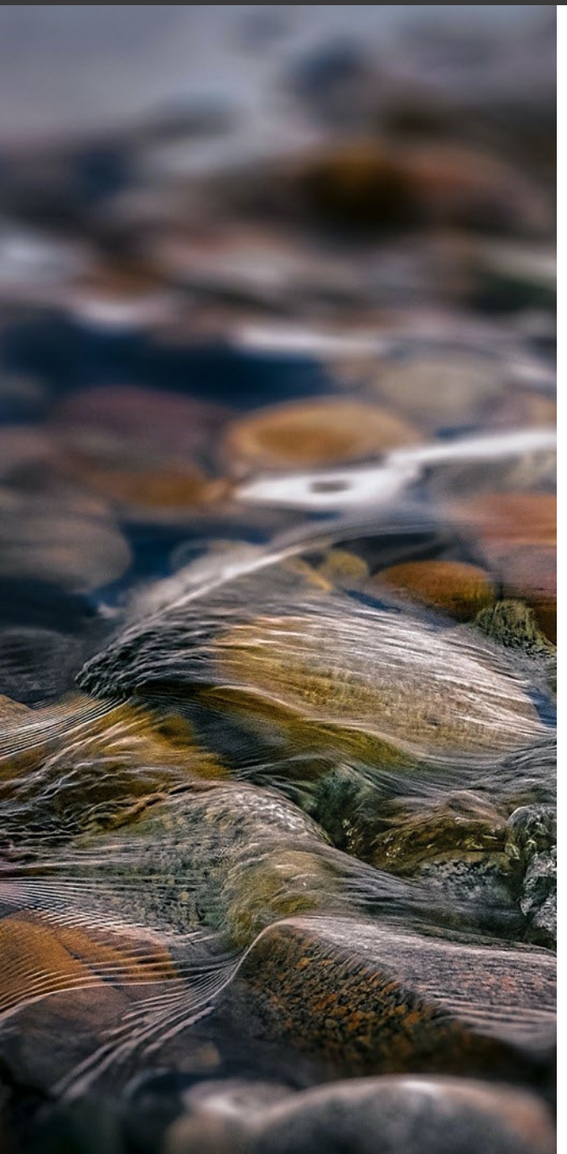
Water supply scenario findings

Water supply findings



- In all scenarios, industrial development increases in very highly vulnerable drinking water supply management areas. More industrial development occurs in high growth scenarios.
- Growth patterns impact future water demand. In all scenarios, regional water demand increases. However, other factors such as climate are also significant.
- Dispersed scenarios rely more on groundwater than surface water, compared to compact scenarios.

Implications on land use policy



Water supply findings

Compact development uses a larger percentage of surface water to meet future growth versus dispersed development.

Consider managing growth in ways that balance communities' use of surface water and groundwater.

Industrial development takes the most acres of new development in highly vulnerable drinking water supply management areas.

Consider ways to ensure new industrial – and all other development – is constructed to minimize water impacts.

Wastewater scenario findings

Key wastewater concepts

Regional Service Area (RSA)

Growth within the RSA is planned to be served by the regional wastewater system.

Growth outside the RSA is assumed to be served by ISTSs and local, rural WWTPs.

The amount of growth served in the RSA changes by scenario.

Regional System Capacity

Capacity utilized is impacted by the amount of growth as well as where that growth is occurring.

Capital investments are tailored to regional system capacity needs.

Other Facilities

Demand for, location, and composition of regional facilities and services will change by scenario.

- Liquid waste receiving facilities
- Vactor waste facilities
- Solids processing

Individual Sewage Treatment System (ISTS)
Wastewater Treatment Plant (WWTP)

Wastewater analyses results

Regional Service Area (RSA)

- Within the RSA, High-Dispersed scenario focuses growth in outlying parts of the regional system.
- Outside the RSA, this scenario increases ISTS growth and puts pressure on rural, local WWTPs.
- High-Dispersed scenario could necessitate infrastructure expansion or acquisition (or influence the timing of).

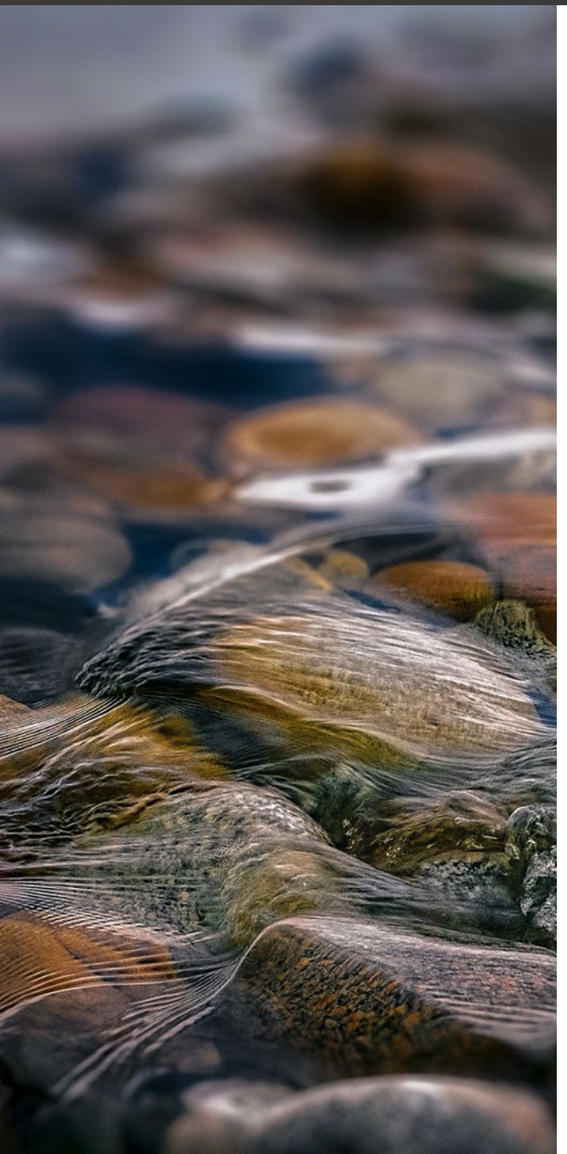
Regional System Capacity

- High-Compact scenario puts pressure on regional infrastructure in the urban center.
- High/Dispersed scenario puts pressure on upstream infrastructure in outlying parts of the regional system.

Other Facilities

- High-Dispersed scenario could increase demand for regional facilities and services further out in the region and at smaller WWTPs, which may need investments to be able to accommodate them.

Connections to land use policy



Within the Regional Service Area

Compact development uses existing wastewater infrastructure more efficiently.

High/Dispersed puts pressure on outlying areas of the RSA

- Infrastructure expansion
- Timing of extension or acquisition of infrastructure

Outside the Regional Service Area

High/Dispersed puts pressure outside the RSA

- Significant growth in ISTS
- Rural WWTP pressures
- Induced growth
- Incentivizing large lots

QUESTIONS

Kyle Colvin
Manager, Wastewater Planning and Community Programs

Judy Sventek
Manager, Water Resources

METROPOLITAN
COUNCIL