



City of Olympia

Thurston County Sensitive Areas

Wellhead Protection - McAllister and Shana Park

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Groundwater Protection Program

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Water Supply

Sources of Water Supply

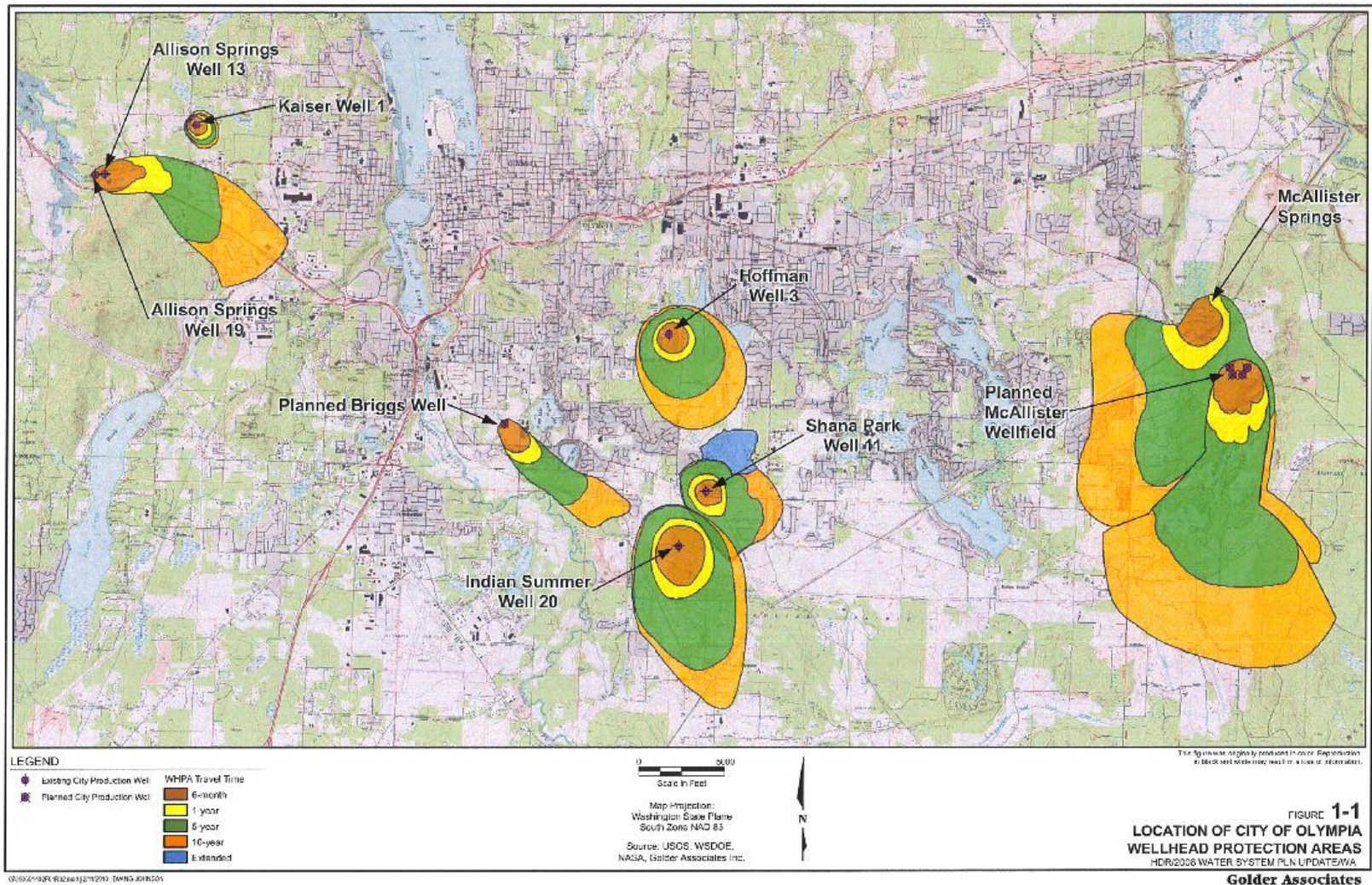
- McAllister Springs/Wellfield – primary source (85%)
- Groundwater wells (6) – supplemental (15%)

Groundwater flow - moves very slowly (months to years)

Drinking Water (Wellhead) Protection Areas

- Required by State Health – monitor source water quality
- Protected by City and County Ordinance – zoning/land use
- Monitoring wells – warn about approaching contamination

Wellhead Protection Areas



Protection Strategies

Water Quality Monitoring

- City collects samples from sources and monitoring wells regularly
- Bacteria – presence/absence of (total and fecal) coliform
- Nitrate – human health standard = 10 mg/L

Zoning and Land Use Limitations

- McAllister Geologically Sensitive Area down zoned in 1990

Public Education

- Shana Park – Landscaping and yard care practices

McAllister Wellhead Protection Areas

McAllister Geologically Sensitive Area

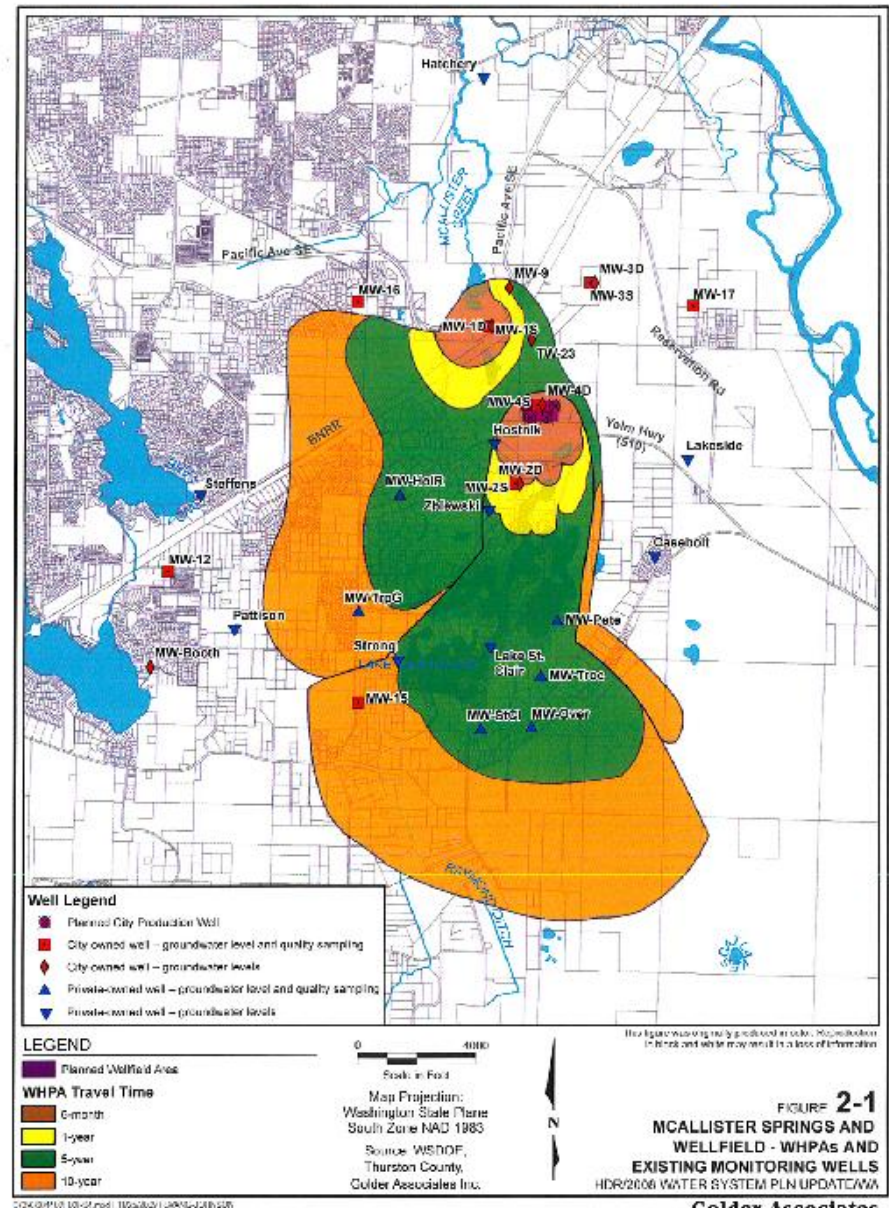
The GSA was formed to minimize the potential for contamination or the loss of groundwater recharge, in the interest of public health, safety and welfare. The GSA was down-zoned in 1990.

McAllister Springs (north)

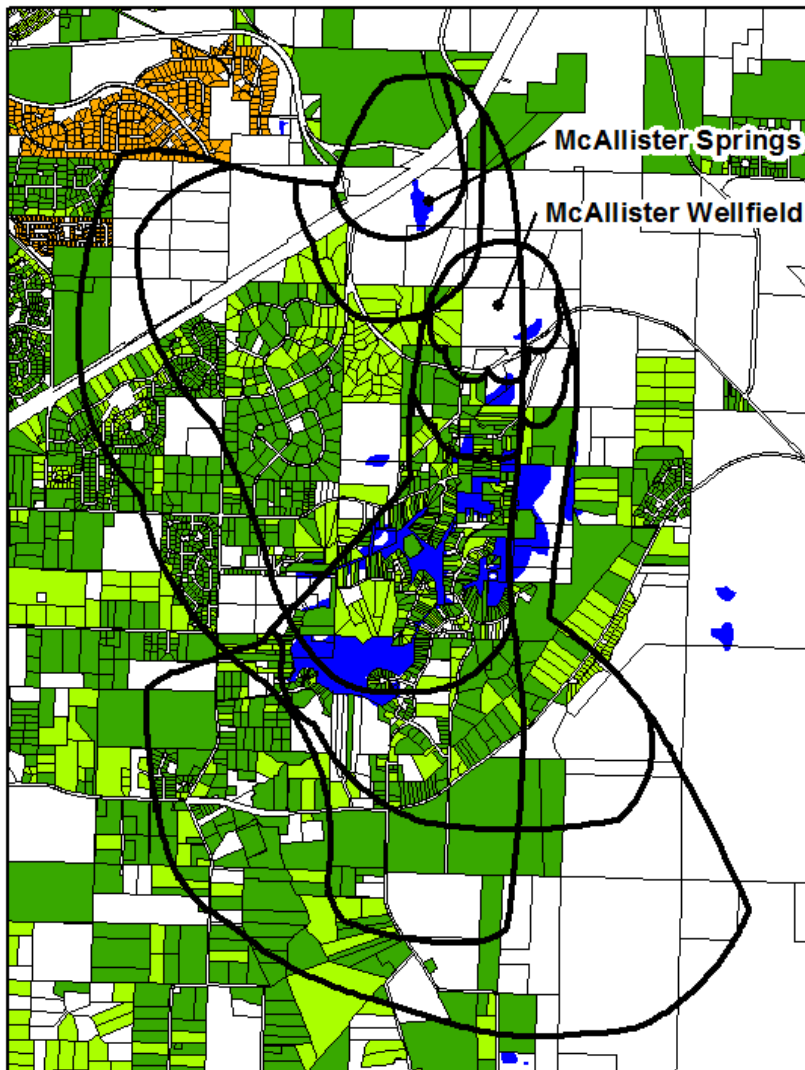
- to be retired

McAllister Wellfield (south)

-production planned for 2014



Distribution of Septic Systems in the McAllister Springs and Wellfield Wellhead Protection Areas



Legend

- Well Head Protection Areas
- Sewer Parcels
- Septic Parcels ≤ 1990
- Septic Parcels > 1990

McAllister Area Nitrate Concern

Nitrate health standard is 10 mg/L.

Spring source – sampled since 1972

- Average 1.36 mg/L (decreasing trend)

Monitoring wells – sampled since late 1980s

- Average up to 2.86 mg/L (trend varies)

Down-zone helping to reduce nitrate?

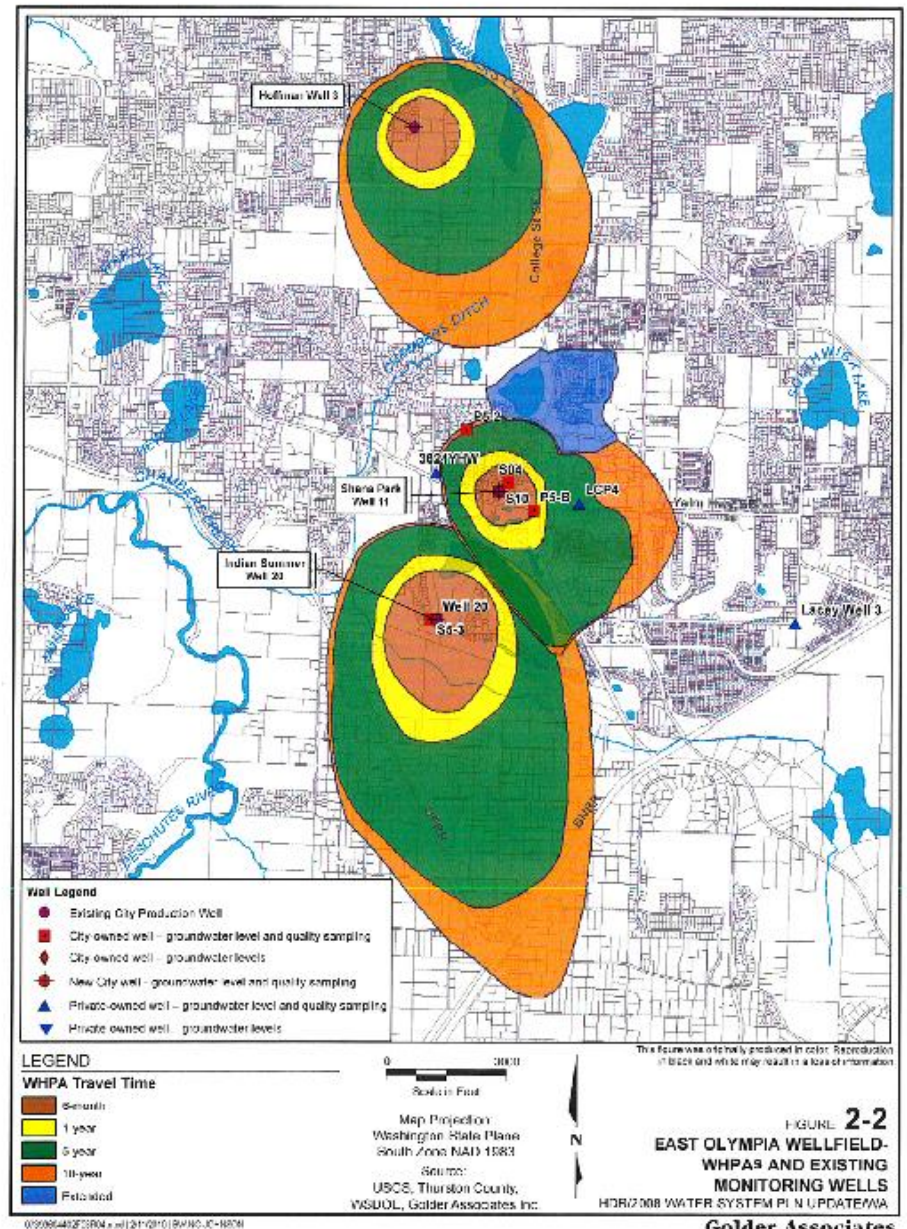
- Apparent shift to decreasing trend since 1990

East Olympia Wellhead Protection Areas

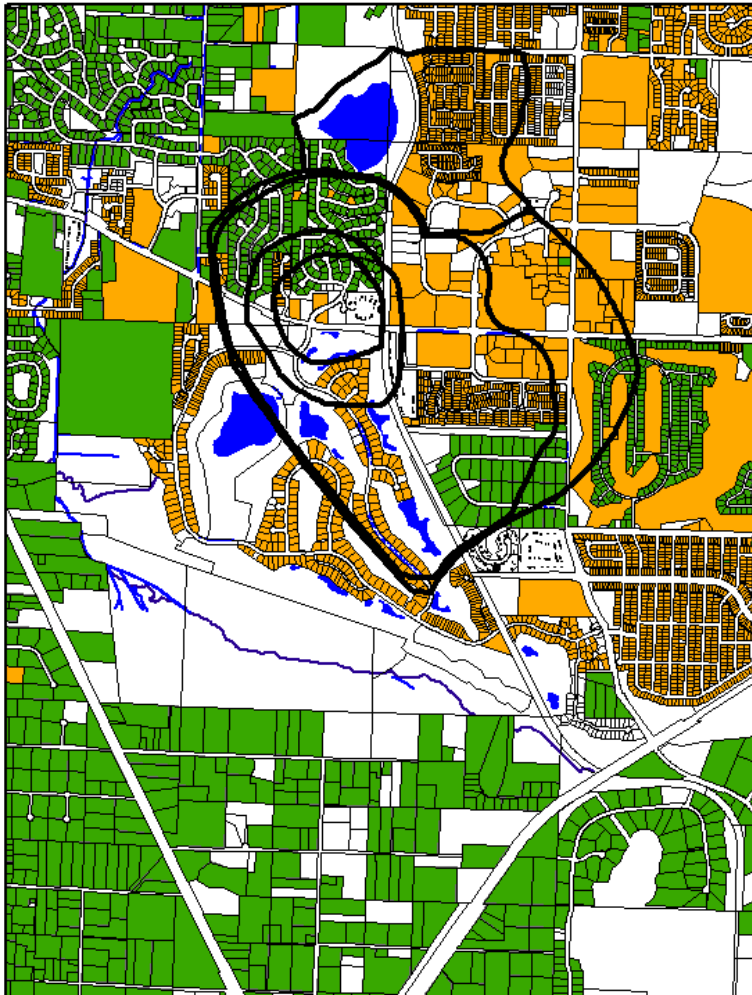
Hoffman Well (north)

Shana Park Well (central)




Indian Summer Well (south)



Distribution of Septic Systems in the Shana Park Wellhead Protection Area



Legend

-  Well Head Protection Areas
-  Sewer Parcels
-  Septic Parcels

Shana Park Nitrate Concern

Nitrate health standard is 10 mg/L.

Source – sampled since 1988

- Long-standing average 2.8 mg/L (slightly decreasing trend)

Monitoring wells – sampled since late 1980s

- Average up to 3 mg/L (many with increasing trend)

Public Education helping to reduce nitrate?

- Studies conducted to better understand source of nitrate
- Community outreach may influence yard care practices

Protecting Groundwater

Nitrate levels in groundwater are a concern.

Sources include fertilizers and septic systems.

Protective strategies work – regulations and education.

Regional issue – jurisdictions are collaborating.

The On-site Sewage System Management Plan

is directly applicable to protecting
the region's groundwater resources.

Thank You!

Questions?

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