



Utah Department of Environmental Quality

AIR

1) Economic and Demographic Trends

- a. Population growth adds sources of air pollution, particularly from the transportation of individuals, goods and services and from the increase in air pollutants associated with consumer and commercial activities and comfort and water heating. Air pollution from consumer activities such as cleaning and surface coating solvents, food preparation and heating are directly tied to population. Each new home and business adds to the existing inventory. For transportation, vehicle miles traveled (VMT) grow at twice the rate of population due to increased travel distances as new outlying areas are developed. New fuels and vehicles produce fewer emissions per mile traveled but still add to the overall emissions at a time when the understanding of the impacts of air pollution are resulting in more protective and difficult to achieve standards.
- b. As metropolitan areas grow, the need for additional population-based federal reference method air monitoring sites is triggered. New mining, construction, oil and gas extraction and raw land development all result in increased emissions of air pollutants. Failure to attain the federal standards can result in restrictions to development of extraction and major manufacturing industries and increased costs for more stringent permitting requirements and installation of additional control equipment.

Health costs increase in areas subjected to high levels of air pollution. Economic development can be directly and indirectly impacted through perceptions about quality of life and employee morale. Roadway expansion funding may be subject to EPA sanctions if an area fails to attain and maintain air quality standards.

Air quality staffing has remained essentially level while population and mandated requirements have continued to increase. Through improvements in efficiency, additional workload has been accomplished without additional staff. Air quality staffing in 2005 was 104.3 FTEs, and with the latest increase of 3 FTEs in 2015 the division is again above 100 FTEs and represents 0.1% of the annual state budget.

2) Current, Emerging, and Future Challenges and the Proposed Action Plans to Address Them

- a. PM10 Maintenance SIP for Salt Lake County, Utah County and Ogden City. A maintenance plan for the non-attainment areas that incorporates emission reductions from the PM2.5 SIP, updates limitations and addresses spring and summer wind-blown dust events. Current Staff and Resources
- b. Clean Power Plan (CAA 111(d)) EPA is expected to finalize the requirements for 111(d) State Plans for Implementation for CO2 emission reductions from the electrical generating sector. Stakeholder work began in 2014 and the state is looking at options for rate-based, mass-based and multi-state trading programs. Two DEQ FTEs will be assigned to this program.



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- c. SO₂ Standard Revision. In 2010 EPA established a 1-hour standard for SO₂. SO₂ is monitored only in Salt Lake County and the monitors show attainment with the standard. Large SO₂ sources are located in unmonitored areas. EPA requires screening modeling for the refineries, smelters and large coal-fired EGUs. If the source fails the screening modeling, new monitors will need to be placed in the area of highest expected concentration. Existing staff and resources for 2015. If new monitors are required \$100,000 initial and \$25,000 ongoing operation.
- d. PM 2.5 Serious Area SIP. The Wasatch Front Counties are not expected to attain the PM_{2.5} moderate area attainment date of 2015. If the area fails to attain, the result is a bump-up to a serious non-attainment area with a requirement for a new SIP in 2017 with an attainment date of 2019. Current staff and resources
- e. 2015 Expected Ozone Standard. EPA is under a court order to finalize a revision to the ozone standard by October 1, 2015. At the levels of the 2014 proposal, the majority of the state will likely fall under the "marginal" non-attainment status which requires only minimal SIP planning requirements. However, non-attainment permitting and general conformity for federally funded project evaluation requirements will apply. The exception will likely be the Uinta Basin and perhaps Salt Lake County. Current staff and resources
- f. Uinta Basin Ozone. Scientific research and emission inventory work in collaboration with industry, local government, EPA and the Ute Tribe is ongoing. New rules to clean up existing equipment have been developed and new source performance standards have been upgraded. Due to the meteorology and complex ozone chemistry in the area it is likely that the basin will be designated as high as a serious non-attainment area under the new standard that has the potential of significantly impacting energy development in the area. Over the past 4 years the legislature has added funding for 5 FTEs to the DEQ staff to address development and ozone issues as well as additional air monitoring and modeling work. There may be a need for additional staff and technical work but probably not until the 2018-20 timeframe.
- g. Regional Haze Second Planning Period. The federal Clean Air Act sets a goal to return to natural visibility conditions at the National Parks by 2064. Utah uniquely benefits from the visibility improvements since the view is integral to the experience that attracts visitation to Utah's "Mighty Five" National Parks. The initial controls that limited SO₂, Particulate Matter and oxides of nitrogen from large coal-fired power plants have resulted in visibility improvements. Existing staff and resources on the state level with requests for additional federal funding for regional inventory and modeling work by the Western Regional Air Partnership (WRAP).
- h. Air Monitoring Equipment Replacement. EPA has established a maximum useful life of federal reference method air monitoring equipment of 60-months. Due to resource constraints the state has been unable to replace aging equipment on the established schedule and the current replacement cost of the outdated equipment is estimated at \$719,000. This amount will continue to increase as more equipment reaches the expected useful life. DEQ has funding for equipment that is currently being fully utilized to repair and replace failing equipment and to establish new monitoring in response to new requirements. A new multi-pollutant air monitoring station is anticipated in the Cedar City area in 2017 (\$200,000 initial and \$50,000 ongoing) and new sites in Utah, Salt Lake, Davis and Tooele Counties are under development now.



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WATER

1) Economic and Demographic Trends

- a. Drinking Water and Wastewater Infrastructure will need to be upgraded to accommodate growth. This means upgrades and expansion of current plants, including equipment to have better data. Over the next 20 years Utah's wastewater infrastructure needs are estimated to be \$3.42 billion
- b. Increased population will lead to more stringent standards to protect our waters. Additional rules from the EPA, like the Coliform Rule for Drinking Water will need to be implemented. The increased growth and increasingly depleted flows in our rivers and streams, higher levels of treatment will become necessary to simply maintain the current levels of water quality in our lakes and streams.

2) Current, Emerging, and Future Challenges and the Proposed Action Plans to Address Them

- a. Utah Needs More Accurate Data on Water Usage-A 2014 legislative audit report recommended the Division of Drinking Water This report recommended that the Division do several things to update its rules. The Division is proceeding with the rule clarifications recommended in the Audit Report. It is also preparing a plan to obtain peak day water usage data to be used in updating its Source Sizing Requirements. This plan will identify water systems to be surveyed, equipment needed to obtain the data and the time periods to collect the data.
- b. Water diversions are depleting flows in Utah's lakes and streams and could significantly impact economic development, ecosystem and quality of life. Plans are being developed to divert 220,000 acre-feet/year of water from the Bear River (and Great Salt Lake) to satisfy future water needs along the Wasatch Front. It is estimated that 35-40% of that flow will be depleted and not return to the natural environment. Reduced flows will likely impact the already shrinking levels of the lake, affecting not only the ecosystem but the brine shrimp, extractive mineral and tourism industries that are dependent on the lake and would likely worsen air quality problems along the Wasatch Front and huge areas of the bed of Great Salt Lake are exposed.

Plan 1:The Division of Forestry, Fire and State Lands is studying of the hydrology of Great Salt Lake to inform decisions, taking into account air quality and water quality impacts and other ecological and industrial impacts.

Plan 2:Remove the cap on the portion of the 1/16% sales tax funds that are allocated to the Water Quality Board to fund wastewater infrastructure projects. This will require the diversion of some sales tax funding that is currently apportioned to the Department of Natural Resources. This would provide a sustainable funding source in order to perform the necessary studies and research to establish water quality standards that protect Great Salt Lake and to understand and mitigate the impacts of reduced water flows to the lake.



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- c. New and Emerging Water Quality Standards may require facilities to upgrade. A new and more stringent ammonia standard developed by EPA must be incorporated into Utah's water quality standards in 2017. A number of wastewater treatment plants in the state will be greatly affected by the new standard necessitating upgrades to facilities and in some cases, e.g., Logan City and Salem City, the need to abandon lagoon treatment facilities and construct more modern mechanical treatment facilities.

Plan 1: Utah is teaming with Colorado to perform a scientific study to determine if the intolerant mussel and snail species that were the basis of EPA's more stringent ammonia standard are present in Utah's waters and if the rule applies in Utah.

- d. Reducing Phosphorous and Nitrogen in Our Lakes and Streams may require wastewater treatment plants to upgrade. Utah, like most other states, is developing numeric nutrient criteria to protect our waters from excessive levels of phosphorus (P) and nitrogen (N). Many wastewater treatment plants were not designed to remove these nutrients. We estimate that the sewer bills for the average Utah household will increase by approximately \$3.50/month to make the needed upgrades to remove excessive P and N.

Plan 1: In 2011 the Division of Water Quality worked with a large group of stakeholders and developed a facility optimization strategy to provide financial and permitting incentives for communities to improve operations at their wastewater treatment plants to remove excess nutrients by employing low- or no-cost approaches.

- e. Spills impacting Utah's water continue to increase; the Department has insufficient authority to collect damages to cover the costs of spills

An increasing population and oil and gas production will likely result in increased accidental and non-accidental spills of polluting substances into our waterways. The recent Chevron spills into Red Butte Creek (oil) and Willard Bay (diesel) and the produced water discharge into Nine-mile Creek are examples.

Plan: 1) The Division of Water Quality recently assigned a staff member to coordinate spills and to pursue and bring closure to these spills, including clean-up and, where necessary, enforcement action. 2) A statutory change will be sought to improve the collection of damages for spills, cover the costs the state incurs responding to spills and to invoke appropriate penalties, where appropriate.

- f. Several chlorinated solvent plumes the state and EPA have identified impact community drinking water systems. Several Community drinking water systems that have either been directly impacted or nearly impacted by chlorinated solvent plumes have been identified but not listed on EPA's National Priorities List (NPL). As sites without viable responsible parties are identified and possibly listed on EPA's National Priorities List, there is a state cost share associated with Federal Superfund Fund-lead sites. DERR has successfully managed state cost share requirements to date, but the addition of more sites requiring cost share would require additional funding appropriated by the legislature.



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LAND

1) Economic and Demographic Trends

- a. Utah Population growth will continue to put pressure on existing solid waste landfill capacity operated by local governments.

The ability of local governments to expand is limited so the trend will be towards "regional landfills" in more rural parts of the state where land is available. The technical permitting of these facilities is generally not an issue but transportation costs will increase because of the distance. These costs are usually passed on to the residents

- b. Population growth will continue to put pressure on our x-ray program.

The associated increase in the number of x-ray machines, including mammography units, requiring registration and on-site inspections to evaluate and ensure the proper operation of the x-ray units as well as monitor adherence to radiation safety procedures for patients, technologists, practitioners, and the public.

Plan: Address via a collaborative effort among DEQ, private organizations, and interested stakeholders/advocacy groups.

- c. Increasing population results in potential increases in Underground Storage Tank (UST) activity and environmental incidents that occur.

This increases the division's UST staff workload in the form of compliance inspections, etc. UST registration fees have not been increased for over ten years, while the cost of providing services has increased over time. DERR is exploring how best to close that gap, examining efficiency improvement, fee increases, or a combination of both in order to best serve the regulated community and protect public health and the environment.

Additionally, UST infrastructure is aging, potentially resulting in releases needing to be addressed, unless owners and operators upgrade their UST infrastructure. Fortunately, as a result of 2014's HB138 which removed the interest rate on loans for UST upgrades, the division has seen an increase in UST upgrades, which should help mitigate the potential for petroleum releases from such facilities.

- d. A more robust economy also results in increased oil and gas production, which in turn increases the number of environmental incidents that occur and are reported to the DEQ Emergency Incident Notification process. Federal resources provided to the state via cooperative agreements and grants have been declining due to federal budget cuts, reprioritizations, etc. This effects the workload the state is able to conduct. The impact has been managed to date via retirements, etc., without backfilling positions vacated. This has been the trend in both Superfund, and LUST/Trust funding.

2) Current, Emerging, and Future Challenges and the Proposed Action Plans to Address Them

- a. Increased pressure to permit landfills in the Uintah Basin for disposal of oil and gas production wastes. This will cycle with the demand for oil. At some point in the near future, we need to look at legislation to create authority to permit waste from oil production because these wastes are currently exempt from regulation as a solid waste. We have issued two permits for landfills for this waste at the request of the companies (they understand the regulatory dilemma) but legislation would resolve the jurisdiction issue



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- b. Energy Solutions' proposal to accept and dispose of Depleted Uranium (DU) is a current issue that may be drawn out depending on the Nuclear Regulatory Commission The DU decision consists of a technical evaluation and determination of the ability of the site to dispose of DU and be protective of public health and the environment, both in a relatively short time horizon of 1,000 to 10,000 years as well as a "deeptime" timeframe for hundreds of thousands of years beyond 10,000 years. The added uncertainty of such "deep time" considerations raises policy issues. In general, Utah residents have voiced a collective concern that the long-term radiological characteristics of DU do not appear to be appropriate for near-surface disposal, particularly given the likely return to a more humid climate that has the potential to inundate the site and erode the stability of any disposal cell.

NRC's proposed changes to the federal regulations (10 CFR Part 61) for the disposal of low-level radioactive waste will require Utah to evaluate its current laws and rules and determine the best approach. The state will need to consider long-term stewardship and land ownership of the Clive facility.

Plan: DEQ will continue to work with state policy leaders regarding long-term stewardship matters and also participate in the NRC rulemaking proposals regarding low-level radioactive waste in order to offer input that serves the needs and interests of Utah.

- c. Federal funding Decreases in Federal funding to Superfund, LUST/Trust and possibly Brownfields grants hurts the level of service the state can provide. DERR has successfully managed funding decreases in recent years through staff attrition, workload reprioritization, and efficiency improvements. If future funding decreases are brought to bear, DERR programs may not be sufficiently funded to provide the level of service necessary to maintain or improve the environment (through site investigation and cleanup) and/or level of public health tied to environmental investigations and cleanups.
- d. The Above Ground Storage Tank (AST) infrastructure is aging, leading to an increase in AST releases. AST's are currently not regulated and releases from AST's pose similar environmental challenges as those from UST's.
- Plan: Above ground Storage Tank legislation, along with pipeline release legislation could provide a mechanism to protect and or better respond to releases from such entities through prevention incentives (such as was implemented in the UST Trust Fund by HB 138) or provide funding to address releases giving the state the resources needed to mitigate the impacts of such releases. Both of these are policy considerations.