5.0 ALTERNATIVE #1 – NO ACTION OR NO-BUILD

5.1 ASSESSMENT OF FEASIBILITY

The no action or no-build alternative was evaluated against the project purpose and need. The University of Connecticut (University) has previously identified four committed water demands and thus would need to evaluate other potential alternatives for ensuring an adequate margin of safety (MOS) in its water system, or would need to limit its commitments to service those demands under the no action alternative. These committed demands include:

- Storrs Center (in construction)
- The Technology Park on North Campus (certain buildings near construction)
- The North Eagleville Road/King Hill Road planned business area (minimal demand)
- The Depot Campus (certain areas near redevelopment with future development proposed)

Of these, it is most likely that some Technology Park buildings would either not be developed (those other than parcels E and G as noted in the University's 2011 *Water Supply Plan*) or would be differently developed; and most of the Depot Campus reconstruction would not occur (those parcels other than 2 and 2C as noted in the 2011 University *Water Supply Plan*) or would occur with projected water demands that are similar to existing Depot Campus water demands.

Several University projects are projected to occur regardless of the outcome of this Environmental Impact Evaluation (EIE), including extension of North Hillside Road. Potential impacts related to these projects have been evaluated in documents such as the *Final Environmental Impact Evaluation* (FEIS) and the 2008 *Four Corners Area Wastewater Facilities Plan*. The reader is directed to these documents for a summary of impacts in those project areas.

Under the no action or no-build alternative, the University would not obtain an additional source of water supply. As such, this alternative fundamentally does not meet the project purpose and need. However, it provides the baseline against which other alternatives can be measured and, therefore, impacts are evaluated herein.

5.2 LAND USE AND ZONING

The no action or no-build alternative would result in few land use impacts since public water service would not be extended from other areas, nor would the University extend water service beyond its current service area. Under the no action alternative, extension of North Hillside Road to Route 44 would still occur, allowing for some Technology Park buildings to be built, provided that the University has sufficient water supply from its existing system to support the full or partial development. The Town of Mansfield would also extend sanitary sewer service to Mansfield Four Corners to provide service to existing and proposed residential and commercial development and redevelopment. An overlay zone within the town of Mansfield that would restrict development within potential pipeline routes would not be necessary under this alternative.

5.3 SOCIOECONOMICS

Socioeconomically, the University would be adversely impacted by this alternative. The University would still need to supply its previously committed demands and thus would need to evaluate other potential alternatives for ensuring an adequate MOS in its water system, or would need to limit its commitments to service those demands. Given that the proposed development associated with the Technology Park and Depot Campus is for research and education purposes consistent with the University's mission, the University's mission would be hindered by this alternative.

The total population, average household size, percentage of low-income populations, and percentage of minority populations in areas of Mansfield and the region would continue to be primarily affected by other projects and current economic and social indicators. Existing neighborhoods outside of currently proposed development areas would not change. Low-income populations and minority populations in potential project areas on and near the University campus would not benefit from the availability of public water supply.

Underutilized areas such as Mansfield Four Corners would likely not be redeveloped to the scale envisioned by the Town of Mansfield, resulting in minimal changes to quality of life for nearby residents. While sewer would be extended to this area, the Town of Mansfield would need to develop its own public water supply if it wished to service this area. Alternatively, redevelopment could be performed through the use of private wells and treatment systems. This would increase the operating cost of each affected business in the area. Overall, regional economic growth would be limited as compared to the action alternatives due to a lack of availability of a reliable public water supply. Additionally, desired growth and development consistent with Mansfield's *Plan of Conservation and Development* would be curtailed under this alternative.

No relocation impacts are expected as a result of this alternative, and no right-of-way acquisitions would be required. Furthermore, this alternative will have no construction period and, therefore, no temporary impacts on existing populations within the study area.

5.4 COMMUNITY FACILITIES AND SERVICES

The no action or no-build alternative would have the following effects on education, public safety and emergency services, parks and recreation, and public transportation:

- Education: Some of the proposed research spaces on the North Campus/Technology Park and the Depot Campus may not be realized under the no action or no-build alternative. Therefore, the objectives of the University's *Outlying Parcels Master Plan* may not be achieved. This would be a detriment to the University's future academic and research capabilities.

- Public Safety and Emergency Services: There would be no benefit or impact to public safety and emergency services under the no action alternative; however, public water supply would not be extended into areas that currently have no fire protection.

- Parks and Recreation: There would be no benefit or impact to existing recreation under the no action alternative. Existing facilities would remain unchanged.

- Public Transportation: There would be no change in public transportation under the no action alternative.

5.5 AESTHETIC AND CULTURAL RESOURCES

The no action or no-build alternative would have no impacts to existing aesthetic, visual, historical, or cultural resources since there would be no associated construction.

5.6 PUBLIC WATER SUPPLY

The no action or no-build alternative would not provide additional water supply to the University necessary to maintain a long-term MOS above 1.15 while meeting committed demands, nor would it provide additional water supply to support future growth and redevelopment at the campus or in Mansfield. Existing residential and commercial land uses in the vicinity of the University would continue to operate as they do today, serviced by on-site wells and septic systems or by small public water systems.

The University would be left in a difficult position regarding its ability to meet its committed demands while maintaining an adequate MOS. Table 7-11 of the University's 2011 *Water Supply Plan* notes that the completion of the reclaimed water facility and the permissible use of Fenton River Wellfield Well D for limited periods during the months of September and October would raise monthly MOS above 1.15 in 2015 while Table 7-12 indicates that MOS for peak days would be below 1.15 by September 2015. In the latter case, the University would have to rely on storage to meet its demands under certain circumstances.

The University would need to restrict proposed development on campus; however, those projects forecast to be developed by 2015 in the 2011 University *Water Supply Plan* would likely still be developed. The remaining projects projected through 2030 and 2060 would likely not be developed without additional water supply.

Table 7-15 and Table 7-16 of the University's 2011 *Water Supply Plan* presented projected monthly MOS for 2030 based on previously committed service. These figures have been updated, and results are presented in Table 5.6-1 for the monthly average day demand (ADD) conditions in 2030 and Table 5.6-2 for monthly peak day demand (PDD) conditions in 2030.

Based on the information in Table 5.6-1, it appears that the University could meet the ADD in 2030 provided it did not pursue the full buildout of the Technology Park or the Depot Campus. During the month of September, the system's MOS would drop slightly below 1.15. According to the University's *Water Supply Plan*, the system currently has 7.6 million gallons (MG) of available storage. This storage would allow the University the ability to meet its September 2030 demands for 4.5 days in the event all sources were offline. While not an ideal situation, it is apparent that the University could meet projected ADD through 2030 without full buildout of the Technology Park and the Depot Campus. The reliability and flexibility of the system to respond to emergencies would be reduced.

TABLE 5.6-1
University ADD and Associated MOS Through 2030 Without Full North Campus or Depot Campus Buildout

Month	Current Water Demands[1] (mgd)	New Committed Water Demands[2] (mgd)	Future Reclaimed Water Facility Offset (mgd)	2030 ADD (mgd)	Available Water Supply (mgd)[3]	MOS
January	1.18	0.21	-0.20	1.19	2.32	1.95
February	1.59	0.30	-0.20	1.69	2.32	1.37
March	1.28	0.24	-0.19	1.32	2.32	1.75
April	1.53	0.29	-0.18	1.64	2.32	1.42
May	1.06	0.16	-0.34	0.88	2.32	2.62
June	1.09	0.16	-0.35	0.90	1.48	1.65
July	1.16	0.16	-0.40	0.92	1.48	1.60
August	1.17	0.17	-0.37	0.98	1.48	1.51
September	1.64	0.30	-0.27	1.67	1.83	1.09
October	1.52	0.28	-0.23	1.57	1.83	1.17
November	1.34	0.24	-0.25	1.33	2.32	1.75
December	1.27	0.22	-0.25	1.24	2.32	1.88

Notes:
1. Based on maximum of 2008 through 2010 data as in 2011 University Water Supply Plan
2. Based on reduced future committed demands at North Campus and the Depot Campus
3. Based on an available water supply of 1.48 mgd from the Willimantic River Wellfield year round, 0.84 mgd from the Fenton River Wellfield from November through May, and 0.35 mgd available from Fenton Well D in September and October in accordance with recommendations of the University's Water Supply Plan

Yellow shading denotes a MOS below 1.15.
mgd = million gallons per day

Based on the information in Table 5.6-2, the University could meet the PDD in 2030 provided it did not pursue the full buildout of the Technology Park or the Depot Campus. During the months of June through October, the system's MOS would drop below 1.15 and, during the month of August, it would drop below 1.00.

As noted above, the system currently has 7.6 MG of available storage. Since the PDD happens on one day per month, the University could draw off of its storage supplies to meet the PDD, which would likely occur near the end of August when students return to campus for the fall semester. The difference between available water and PDD (0.22 MG) is equivalent to less than 3% of available usable storage. While not an ideal situation, it is apparent that the University could meet projected PDD through 2030 without full buildout of the Technology Park and the Depot Campus by utilizing its storage supplies. The reliability and flexibility of the system to respond to emergencies during peak demands would be reduced.

TABLE 5.6-2
University PDD and Associated MOS Through 2030 Without Full North Campus or Depot Campus Build-out

Month	Current Water Demands[1] (mgd)	New Committed Water Demands[2] (mgd)	Future Reclaimed Water Facility Offset (mgd)	2030 PDD (mgd)	Available Water Supply (mgd)[3]	MOS
January	1.86	0.28	-0.20	1.94	2.81	1.45
February	2.04	0.40	-0.20	2.24	2.81	1.26
March	2.23	0.31	-0.19	2.36	2.81	1.19
April	2.03	0.39	-0.18	2.24	2.81	1.26
May	1.78	0.21	-0.34	1.65	2.81	1.70
June	1.9	0.21	-0.35	1.76	1.97	1.12
July	1.93	0.22	-0.40	1.75	1.97	1.13
August	2.33	0.23	-0.37	2.19	1.97	0.90
September	2.12	0.40	-0.27	2.25	2.32	1.03
October	2.02	0.37	-0.23	2.16	2.32	1.07
November	2.16	0.31	-0.25	2.22	2.81	1.26
December	2.01	0.29	-0.25	2.05	2.81	1.37

Notes:
1. Based on maximum of 2008 through 2010 data as in 2011 University Water Supply Plan
2. Based on reduced future committed demands at North Campus and the Depot Campus and a peaking factor of 1.33 as in 2011 University Water Supply Plan
3. Based on an available water supply of 1.97 mgd from the Willimantic River Wellfield year round, 0.84 mgd from the Fenton River Wellfield from November through May, and 0.35 mgd available from Fenton Well D in September and October in accordance with recommendations of the University's Water Supply Plan

Yellow shading denotes a MOS below 1.15. Pink shading denotes a MOS below 1.00.
mgd = million gallons per day

5.7 OTHER PUBLIC UTILITIES AND SERVICES

5.7.1 SANITARY SEWER

Under the no action or no-build alternative, wastewater generation would not likely increase by a significant amount. No impacts to the sanitary sewer collection or treatment systems are anticipated.

5.7.2 STORMWATER SYSTEMS, BRIDGES, AND CULVERTS

No impacts to existing stormwater systems are expected under this alternative.

5.7.3 ENERGY, ELECTRICITY, AND NATURAL GAS

No additional energy consumption, electrical usage, or natural gas consumption would occur associated with this alternative.

5.7.4 TELECOMMUNICATIONS SERVICE

No impacts to telecommunications service are expected under this alternative.

5.8 TRAFFIC, PARKING, AND OTHER TRANSPORTATION

Regardless of the selected alternative, North Hillside Road will be extended to Route 44 since it is traffic mitigation for the UConn 2000 projects. Once open, it will improve the level of service at the intersection of Route 195 and Moulton Road and at the intersection of Route 195 and North Eagleville Road. This will provide a slight benefit to traffic in the vicinity of the University. New utilities will be extended along this route during construction of the new roadway with no impact to traffic. In addition, access to the pedestrian walkway and bikeway on Route 44 from the University will be improved regardless of the scenario selected through the sidewalks along this new roadway.

No direct traffic, parking, or other transportation impacts have been identified associated with this alternative.

5.9 WETLAND RESOURCES

The implementation of the no action or no-build alternative would result in no direct wetland impact.

5.10 BIOLOGICAL ENVIRONMENT

The implementation of the no action or no-build alternative would result in no direct impact to the biological environment.

5.11 INLAND FISHERIES

Under the no action or no-build alternative, the current environmental limitations specified in the University's 2011 *Wellfield Management Plan* would remain in effect. Thus, implementation of the no action or no-build alternative is not expected to result in any benefits or impacts to existing fisheries resources.

5.12 WATER QUALITY AND STORMWATER MANAGEMENT

5.12.1 SURFACE WATER RESOURCES

The no action or no-build alternative is unlikely to result in a benefit or impact to surface water quality as no construction or additional withdrawals will occur near or within surface water sources.

5.12.2 GROUNDWATER RESOURCES

The implementation of the no action or no-build alternative will not result in any direct benefit or impact to groundwater resources. However, this alternative may result in property owners in the Mansfield Four Corners area relying on individual water systems. This puts the economic burden of treatment system maintenance and water testing on the individual property owner. Expenses can be more than $1,000 for carbon replacement and $100 per sampling location for volatile organic carbons; this is not an ideal situation in a historically contaminated area.

5.12.3 STORMWATER MANAGEMENT

As the no action or no-build alternative is believed to reduce the magnitude of new development, it is expected that relatively minimal increases in impervious surfaces would occur as the result of this alternative. New University projects would have stormwater management controls that would maintain peak rates of runoff and provide water quality improvement prior to the stormwater leaving the site. Local projects would pass through various zoning and other reviews that would include an analysis of the stormwater management system proposed for that parcel. This would help maintain existing stormwater quality at or near current levels.

5.13 FLOOD HAZARD POTENTIAL

The implementation of the no action or no-build alternative would not result in any direct impacts within floodplains or stream channel encroachment lines (SCELs).

5.14 PHYSICAL ENVIRONMENT

No impacts to the physical environment are expected under the no action or no-build alternative. Future redevelopment in the Mansfield Four Corners area is expected to have a minimal impact on the physical environment as much of this area is already developed.

5.15 AIR QUALITY AND NOISE

The implementation of the no action or no-build alternative may result in a small benefit to air quality in that the lack of extensive construction will reduce the chance for off-site tracking of soil particles and dust. Similarly, the implementation of the no action or no-build alternative would result in minimal impacts to noise due to construction.

5.16 SOLID WASTE, HAZARDOUS MATERIALS, AND POTENTIAL POLLUTION SOURCES

5.16.1 SOLID WASTE

The reduction in development at the University and slower redevelopment in the Mansfield Four Corners area will result in less generation of solid waste than for the full-build condition.

5.16.2 HAZARDOUS MATERIALS

The lack of development at the University and slower redevelopment in the Mansfield Four Corners area may result in less use of hazardous materials and less generation of hazardous wastes as compared to action alternatives.

5.16.3 OTHER POTENTIAL POLLUTION SOURCES

The implementation of the no action or no-build alternative is not expected to have any impact on other pollution sources.

5.17 OTHER PROJECT IMPACTS

5.17.1 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The implementation of the no action or no-build alternative will not have any unavoidable adverse environmental impacts other than the limited MOS of the University's supply system.

5.17.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The implementation of the no action or no-build alternative will require no irreversible or irretrievable commitment of resources.

5.17.3 CUMULATIVE IMPACTS

Cumulative impacts are those that result from the incremental impact of a proposed action when added to other past, present, or reasonably foreseeable future actions. Potential cumulative impacts are not associated with the no action or no-build alternative other than the cumulative impact of inadequate supplies of water to serve current and future uses.

5.18 EVALUATION OF PROJECT COSTS

5.18.1 LAND ACQUISITION AND EASEMENT COSTS

The implementation of the no action or no-build alternative will not require any easements or land acquisition, or the expenditure of associated costs.

5.18.2 COSTS TO IMPROVE EXISTING INFRASTRUCTURE

Improvements to existing infrastructure would not occur under the no action or no-build alternative.

5.18.3 CONSTRUCTION COSTS

The implementation of the no action or no-build alternative would not have any construction costs.

5.18.4 ANALYSIS OF PROBABLE CAPITAL COSTS

The direct project costs under the no action or no-build alternative would be zero. As this alternative would not result in the generation or acquisition of new water for the University, a cost per gallon estimate for this alternative cannot be quantified.