Dominant Physical Factors

- Depth/Velocity
- Travel Time
- Temperature

Depth and Velocity

Influence:

- Travel times
- Settling/Scour
- Reaeration rates
- Temperatures

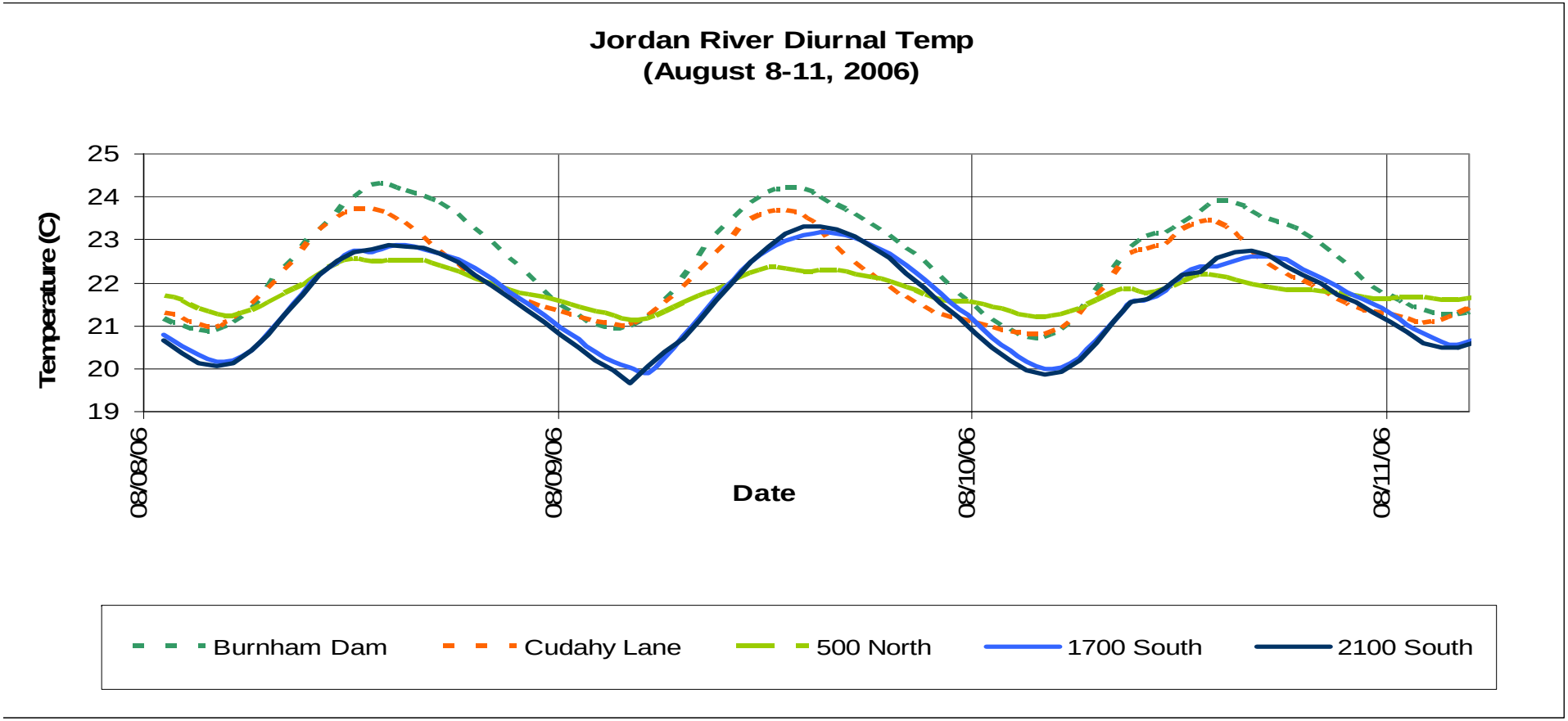
Depth and Velocity

	Jordan River, Ave	2100 S. to North Temple
Average Depth (ft)	3.0	2.7
Average Velocity (ft/s)	1.2	1.5
ka, 20 C (day -1)	2.2	3.3
ka, 17 C (day -1)	2.09	3.09
ka, 25 C (day -1)	2.52	3.73

	Davis County Line to F. Bay	Surplus Canal
Average Depth (ft)	3.5	4
Average Velocity (ft/s)	1	2.5
ka, 20 C (day -1)	1.4	2.9
ka, 17 C (day -1)	1.33	2.67
ka, 25 C (day -1)	1.61	3.22

Temperature

- Influences
  - Reaction Rates
    - Reaeration
    - Reaction Rates (nitrification, denitrification, hydrolysis, etc.)
    - Algae Growth/Death Rates
  - Oxygen Saturation



Jordan River 8/8/06-8/11/06

	Average Temperatures	Min	Max
Bangerter Hwy	20.94	17.07	24.76
9000 South	20.34	17.53	22.83
4100 South	20.23	5.31	22.92
2100 South	21.66	19.65	23.31
1700 South	21.73	19.20	23.18
500 North	21.98	19.79	22.53
Cudahy Lane	22.19	20.66	23.71
Burnham Dam	22.53	20.71	24.26

Temperature Effects

	Jordan River
Average Depth (ft)	3.0
Average Velocity (ft/s)	1.2

		Osat			
T (C)	T (K)	Temp Correction	Pressure Correction	ka,t	ka,t* (Osat-6mg/L) = mg-O2/L/day
17.0	290.2	9.7	8.2	2.09	4.7
20.0	293.2	9.1	7.7	2.24	3.9
25.0	298.2	8.3	7.0	2.52	2.6

			Osat			
	T (C)	T (K)	Temp Correction	Pressure Correction	ka,t	ka,t* (Osat-6mg/L) = mg-O2/L/day
2100 South	21.655823	294.8	8.802	7.501	2.33	3.5
1700 South	21.727183	294.9	8.790	7.490	2.34	3.5
500 North	21.984061	295.1	8.746	7.453	2.35	3.4
Cudahy Lane	22.187416	295.3	8.712	7.424	2.36	3.4
Burnham Dam	22.531369	295.7	8.655	7.375	2.38	3.3

Example Reaction Rate Temperature Correction

BOD Decay

	Min	Max
Kd, 20	0.080	4.2
Kd,17	0.070	3.7
Kd, 25	0.101	5.3

Wright and McDonnell (1979)