

## North Central Texas Water Quality Project

### Study of Eagle Mountain Watershed Wastewater Treatment Plants

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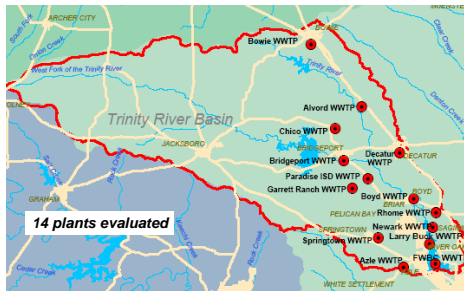
## North Central Texas Water Quality Project

### Objectives

- Identify point source loads (wastewater treatment plants) within the watershed.
- Assess current load, permit limits, and annual variability.
- Evaluate 2050 projections of flow.
- Evaluate plant improvements needed to achieve:
  - Level I—current permit limits.
  - Level II—TN = 10 mg/L, TP = 1 mg/L.
  - Level III—TN = 5 mg/L, TP = 0.5 mg/L.
- Develop cost estimates for each level of improvement.

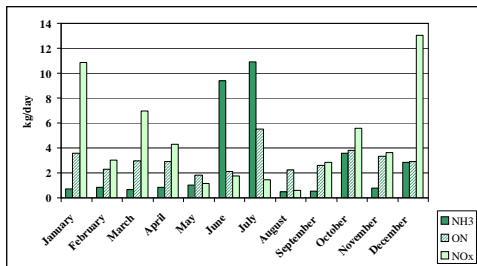
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### Eagle Mountain Wastewater Plants



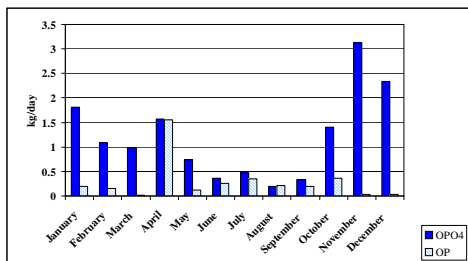
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### Load and Permit Data—Azle (Nitrogen)



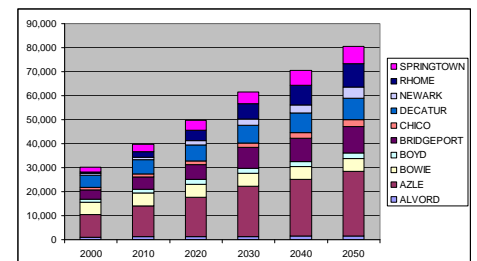
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### Load and Permit Data—Azle (Phosphorus)



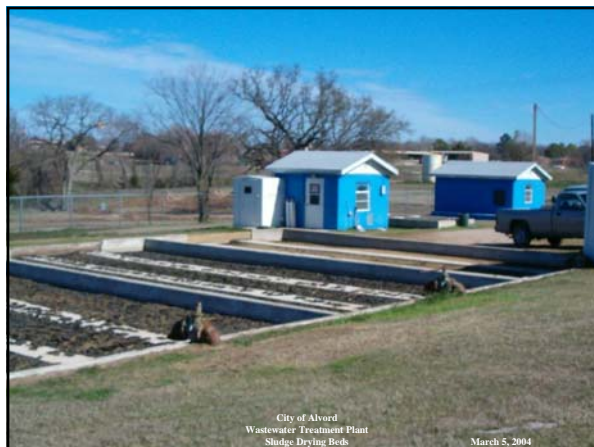
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### 2050 Population and Flow Projections



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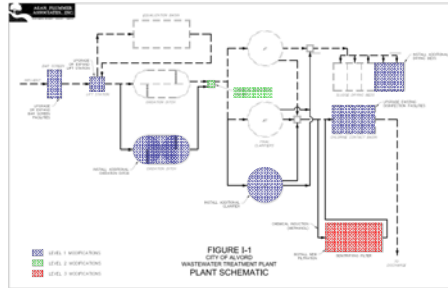
## Plant Visits: Data Collection and Process Evaluation



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### Plant Process Evaluation (Alvord)



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### Eagle Mountain: 2050 N Loads

City or Facility	Current Load (lb/day)	Loads at 2050 Flows (lbs/day)		
		Level I	Level II	Level III
Alvord	13	23	14	7
Azle	23	96	264	132
Bowie	97	101	47	23
Boyd	5	11	15	8
Bridgeport	53	116	107	53
Chico	13	36	23	11
Decatur	58	92	88	44
Ft Worth Boat Club	1	-	-	-
Garrett Creek Ranch	3	-	-	-
Larry Buck RV Park	1	-	-	-
Newark	4	38	33	16
Paradise ISD	3	29	18	9
Rhome	3	82	79	40
Springtown	16	52	58	29
<b>Total Loads</b>	<b>293</b>	<b>676</b>	<b>745</b>	<b>373</b>
<b>Increase or (Decrease) from Current Load</b>		<b>383</b>	<b>452</b>	<b>80</b>
<b>Increase or (Decrease) in tons/yr</b>		<b>70</b>	<b>82</b>	<b>15</b>

\*Current and Level I loads based on average effluent concentration determined by nutrient testing

# North Central Texas

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### Eagle Mountain: 2050 TP Loads

City or Facility	Current Load (lb/day)	Loads at 2050 Flows (lbs/day)		
		Level I	Level II	Level III
Alvord	5	9	1	1
Azle	3	14	26	13
Bowie	15	16	5	2
Boyd	1	3	2	1
Bridgeport	10	22	11	5
Chico	5	14	2	1
Decatur	13	20	9	4
Ft Worth Boat Club	0.2	-	-	-
Garrett Creek Ranch	0.4	-	-	-
Larry Buck RV Park	0.1	-	-	-
Newark	1	12	3	2
Paradise ISD	1	11	2	1
Rhome	1	18	8	4
Springtown	4	13	6	3
<b>Total Loads</b>	<b>60</b>	<b>149</b>	<b>75</b>	<b>37</b>
<b>Increase or (Decrease) from Current Load</b>		<b>89</b>	<b>15</b>	<b>(23)</b>
<b>Increase or (Decrease) in tons/yr</b>		<b>16</b>	<b>3</b>	<b>(4)</b>

\*Current and Level I loads based on average effluent concentration determined by nutrient testing

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### Eagle Mountain: Cost Summary

City or Facility	Costs Associated with Upgrades		
	Level I	Level II	Level III
Alvord	\$1,808,352	\$51,005	\$579,600
Azle	\$13,544,093	\$255,024	\$1,761,984
Bowie	\$0	\$51,005	\$835,783
Boyd	\$0	\$102,010	\$586,555
Bridgeport	\$5,765,861	\$127,512	\$840,420
Chico	\$2,056,421	\$51,005	\$630,605
Decatur	\$8,390,290	\$127,512	\$840,420
Ft. Worth Boat Club	\$0	\$0	\$0
Garrett Creek Ranch	\$0	\$0	\$0
Larry Buck RV Park	\$0	\$0	\$0
Newark	\$3,106,656	\$51,005	\$672,336
Paradise ISD	\$2,137,565	\$51,005	\$605,102
Rhome	\$8,063,395	\$51,005	\$835,783
Springtown	\$4,750,402	\$51,005	\$835,783
<b>Total Costs</b>	<b>\$49,623,034</b>	<b>\$969,091</b>	<b>\$9,024,372</b>