

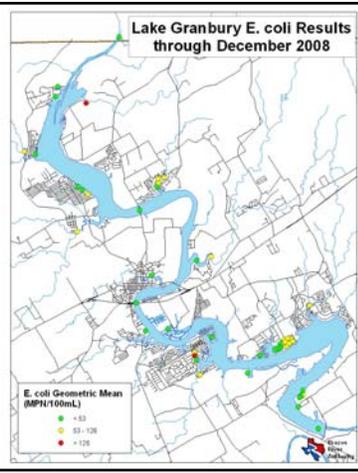
### Prioritization of Sources for BMP Investigation

### Purpose of BMPs

- Bring waterbody into compliance with stakeholder goals
  - Reduce and/or maintain bacteria concentrations in the canals below 53 MPN/100mL
- Protect water resources and downstream areas from increased pollution
- Reducing the availability of pollutants to the environment
- Guide the implementation of watershed management program

### Recommendations from Last Meeting

- Use watershed/cove models from this point forward to evaluate potential effectiveness of BMPs
- Focus on what can reasonably be controlled
  - While non-avian wildlife is indicated to be a source by BST, it is not easily controllable
- Use routine water quality monitoring to assess effectiveness of BMPs



**Brazos River Authority**

### Cove System Ranking based on Geometric Mean and Frequency Distribution (3=most desirable, 15=least desirable)

Subdivision	Geometric Mean	% of Samples Below 53	% of Samples Below 126	Rank
Indian Harbor	90.83	39%	64%	13
Port Ridgea East	74.21	41%	68%	13
Oak Trail Shores	55.40	53%	69%	12
Sky Harbor	56.14	51%	72%	12
Nassau Bay II	39.87	56%	78%	8
Blue Water Shores	29.74	61%	75%	7
Rolling Hills Shores	25.52	64%	76%	7
Holiday Estates	24.84	67%	83%	6
Port Ridgea West	32.84	64%	82%	6
Mallard Pointe	11.94	79%	82%	5
Lambert Branch	19.25	68%	86%	5
Arrowhead Shores	13.97	79%	92%	3
Waters Edge	18.84	75%	90%	3
Ports O' Call	7.85	96%	98%	3
Rough Creek Cove	8.34	89%	96%	3
Granbury Dam	2.17	98%	98%	3
Granbury at Business 377	5.34	93%	95%	3
Granbury at FM 51	4.63	91%	91%	3

**Brazos River Authority**

### Stream Ranking based on Geometric Mean and Frequency Distribution (2=most desirable, 10=least desirable)

Stream	Geometric Mean	% of Samples Below 126	Rank
Long Creek	177.25	54%	10
Walnut Creek	112.26	57%	8
Strouds Creek	95.71	71%	8
Rucker Creek	93.42	64%	6
Robinson Creek	77.64	71%	6
Brazos River at Lake Country Acres	32.23	75%	4

**Brazos River Authority**

### Cove Ranking Calculation

Subdivision	Geometric Mean	% of Samples Below 53	% of Samples Below 126	Rank
Indian Harbor	3	5	5	13
Port Ridgea East	3	5	5	13
Oak Trail Shores	3	4	5	12
Sky Harbor	3	4	5	12
Nassau Bay II	1	3	4	8
Blue Water Shores	1	2	4	7
Rolling Hills Shores	1	2	4	7
Holiday Estates	1	2	3	6
Port Ridgea West	1	2	3	6
Mallard Pointe	1	1	3	5
Lambert Branch	1	2	2	5
Arrowhead Shores	1	1	1	3
Waters Edge	1	1	1	3
Canyon Creek Cove	1	1	1	3
Ports O' Call	1	1	1	3
Rough Creek Cove	1	1	1	3
Granbury Dam	1	1	1	3
Granbury at Business 377	1	1	1	3
Granbury at FM 51	1	1	1	3

$<53 = 1$        $>74 = 1$        $>89 = 1$   
 $53 - 126 = 3$        $60 - 74 = 2$        $85 - 89 = 2$   
 $>126 = 5$        $55 - 59 = 3$        $80 - 84 = 3$   
                           $50 - 54 = 4$        $75 - 79 = 4$

**Brazos River Authority**

### Stream Ranking Calculation

Subdivision	Geometric Mean	% of Samples Below 126	Rank
Long Creek	5	5	10
Walnut Creek	3	5	8
Strouds Creek	3	5	8
Rucker Creek	3	3	6
Robinson Creek	3	3	6
Brazos River at Lake Country Acres	1	3	4

$<53 = 1$        $>89 = 1$   
 $53 - 126 = 3$        $80 - 89 = 2$   
 $>126 = 5$        $75 - 79 = 3$   
                           $60 - 69 = 4$   
                           $<60 = 5$

**Brazos River Authority**

**Rolling Hills Shores**  
Cove System Ranking = 7

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Rangeland (wildlife)
	Single-family residential (septic)
	Cropland/Pasture (livestock)
Watershed Modeling	Cattle
	Septic
	Pet
Cove Modeling	Septic + NPS
BST (not performed at this location)	

- Brazos River Authority**
- Rolling Hills Shores Source Priorities**
1. Septic/Holding Tanks
  2. Pet/waterfowl and/or wildlife feeding
  3. Cattle/Deer Ranching
  4. Cove dynamics

**Brazos River Authority**

**Arrowhead Shores**  
Cove System Ranking = 4

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
Watershed Modeling	Septic
	Pet
Cove Modeling	Septic + NPS
BST (not performed at this location)	

- Brazos River Authority**
- Arrowhead Shores Source Priorities**
1. Pass for more critical areas
  - 2.
  - 3.

**Brazos River Authority**

**Oak Trail Shores**  
Cove System Ranking = 12

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
Watershed Modeling	Septic
	Pet
Cove Modeling	Septic + NPS
BST (not performed at this location)	

- Brazos River Authority**
- Oak Trail Shores Source Priorities**
1. Septic/Graywater
  2. Pet/stray animals/waterfowl and/or wildlife feeding
  3. Canal dynamics

**Brazos River Authority**

**Sky Harbor**  
Cove System Ranking = 12

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
	Rangeland (wildlife)
	Cropland/Pasture (livestock)
Watershed Modeling	Cattle
	Septic
	Pet
Cove Modeling	NPS
BST	Non-avian Wildlife
	Septic

- Brazos River Authority**
- Sky Harbor Source Priorities**
1. Septic
  2. Livestock
  3. Cove dynamics
  4. Pet/waterfowl and/or wildlife feeding

**Brazos River Authority**

### Lake Granbury at Business 377

Cove System Ranking = 4

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential
	Commercial Services
	Rangeland (wildlife)
	Multi-family residential
	Recreation
Watershed Modeling	Pet
	Septic
Cove Modeling	NPS
BST	Non-avian Wildlife
	Septic
	Livestock

- Brazos River Authority**
- ### Lake Granbury at Business 377
- #### Source Priorities
1. pass
  - 2.
  - 3.

**Brazos River Authority**

### Nassau Bay II

Cove System Ranking = 8

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%, in Holiday Estates Microwatershed)	Single-family residential (septic)
	Rangeland (wildlife)
	Cropland/Pasture (livestock)
Watershed Modeling	Cattle
	Septic
	Pet
	Hog
Cove Modeling	NPS
BST (not performed at this location)	

- Brazos River Authority**
- ### Nassau Bay II Source Priorities
1. Septic
  2. Pet/waterfowl and/or wildlife feeding
  - 3.

**Waters Edge**  
Cove System Ranking = 4

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (sewage)
	Commercial (sewage)
	Cropland/Pasture (livestock)
	Recreation (wildlife)
Watershed Modeling	Pet
Cove Modeling	NPS
BST	Non-avian Wildlife

- Waters Edge Source Priorities**
1. Pet/waterfowl and/or wildlife feeding
  - 2.
  - 3.

**Indian Harbor H**  
Cove System Ranking = 4

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (sewage)
	Commercial (sewage)
	Cropland/Pasture (livestock)
	Recreation (wildlife)
Watershed Modeling	Pet
Cove Modeling	NPS
BST	Non-avian Wildlife

- Ports O' Call Source Priorities**
1. pass
  - 2.
  - 3.



**Brazos River Authority**

### Indian Harbor Cove System Ranking = 13

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
Watershed Modeling	Septic
	Pet
Cove Modeling	Septic + NPS
BST	Non-avian Wildlife
	Livestock

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- Brazos River Authority**
- ### Indian Harbor Source Priorities
1. Septic
  2. Pet/waterfowl and/or wildlife feeding
  3. Cove dynamics



**Brazos River Authority**

### Port Ridglea East Cove System Ranking = 13

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
	Recreation
Watershed Modeling	Septic
	Pet
Lake Modeling	Septic
BST	Non-avian Wildlife
	Livestock

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- Brazos River Authority**
- ### Port Ridglea East Source Priorities
1. Septic
  2. Pet/waterfowl and/or wildlife feeding
  3. Cove dynamics



**Brazos River Authority**

### Blue Water Shores Cove System Ranking = 7

Assessment Strategy	Most Likely Sources (highest to lowest)
2007 Land Use (>2%)	Single-family residential (septic)
	Rangeland (wildlife)
	Cropland/pasture (livestock)
Watershed Modeling	Pet
Cove Modeling	Septic
BST (not performed at this location)	

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- Brazos River Authority**
- ### Blue Water Shores Source Priorities
1. Pet/waterfowl and/or wildlife feeding
  2. Sewage lines
  3. Cove dynamics

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- Brazos River Authority**
- ### Lake-wide Source Priorities
1. Septic
  2. Pet/waterfowl and/or wildlife feeding
  3. Cove dynamics
  4. livestock
  5. Nutrient management

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- Brazos River Authority**
- ### Next Steps
- Project staff – identify BMPs that address sources selected today by stakeholders
  - Further BMP analysis will be based on:
    - Impact on Water Quality
    - Time to implement
    - Cost Effectiveness
    - Availability of funding
    - Community Acceptability
    - Political Acceptability

## **Resolution**

**BE IT RESOLVED** by the Lake Granbury Watershed Protection Plan Stakeholders Group that the area source priorities selected and discussed on January 22, 2009 be used for BMP investigation and analysis.