Clean Marco Waters, LLC
Citizens For Cleaner Water

White Paper:
Common Misconceptions About Water Quality on Marco Island

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Executive Summary

Marco Island, with its extensive canal systems and proximity to sensitive ecological zones, is often the subject of concerns and theories regarding water pollution. While environmental protection is vital, it's equally important to distinguish between data-backed facts and commonly held misconceptions. This paper addresses several frequently cited claims about the sources of water pollution on Marco Island, providing context, population data, and scientific considerations to help guide productive conversation and policy.

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1. Misconception: Pollution from Goodland and Isles of Capri Is a Major Contributor

Claim: Nearby communities, Goodland and Isles of Capri, are polluting Marco's waterways due to their continued use of septic systems

.**Facts**:

- Goodland has a population of approximately 127; Isles of Capri around 600 (and half of them were on Marco's sewer from the start), swelling to 1,300 during peak season.
- Combined, these communities make up approximately 4% or less of the total population of Marco Island, which ranges from 17,000 year-round to over 40,000 in peak season.
- The Big Marco River flows northwest toward the Gulf, theoretically allowing limited pollution travel. However, due to the very small relative population and geographic flow patterns, their impact on Marco's internal canals is likely minimal.
- Most of the Isles of Capri's surrounding waters are continually flushed by the Gulf, further reducing potential impact on Marco's canals. Adjacent Keewaydin does not have water nutrient problems.

Conclusion: The scale and geography make it highly unlikely, if not impossible, for Goodland and Isle of Capri to affect our internal canal water quality but transitioning from septic to a central sewer system is still a sound goal.

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2. Misconception: Old Septic Tanks from the STRP Are Still Leaking

Claim: The pollution in Marco's waters is from old, disconnected septic systems from before the Septic Tank Replacement Program (STRP).

Facts:

- STRP was initiated nearly 20 years ago to convert all Marco Island properties to central sewer.
- Standard practice during STRP included draining, pumping, and filling old septic tanks with sand to prevent future leakage.
- After two decades, any remaining organic material would likely have decomposed, and significant leakage is improbable.
- Our canal water conditions were better before we were on sewers.
- Putting all customers on sewer was better than septic but we now have double the population.

- **Conclusion**: Long-decommissioned septic systems are highly unlikely to be an ongoing source of water pollution today.

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3. Misconception: Lake Okeechobee Discharges Directly Pollute Marco Island

Claim: Discharges from Lake Okeechobee, via the Caloosahatchee River and Ft. Myers, are polluting Marco Island's waters.

Facts:

- While Lake O discharges are a legitimate concern for many coastal communities like Ft Myers and Cape Coral, Marco Island lies roughly 40 miles south of Ft. Myers.
- Scientific testing by Clean Marco Waters (CMW) found no detectable levels of nitrogen or phosphorus from these discharges in Marco's near shore Gulf waters.
- The prevailing currents and distance make direct impact from these discharges to Marco Island unlikely.

Conclusion: While regionally significant to our North, Lake Okeechobee discharges do not appear to be a direct threat to Marco Island's waterways.

4. Misconception: Fertilizer Use Isn't Harmful to Canal Water Quality

Claim: Fertilizer use in landscaping, especially in swales, doesn't impact water quality.

Facts:

- Almost all fertilizer contains nitrogen and phosphorus, the two largest contributors to nutrient pollution and algae growth.
- Too much fertilizer use can impact canal water quality. Excess fertilizer can enter the canals through overspray, rainfall, percolation, and grass clippings blown in canals.
- Marco Island has an ordinance in place to regulate fertilizer use, especially during rainy season but is not fully or consistently enforced.
- Experts disagree on the specific type and amount of fertilizer necessary for healthy grass.
- The City is currently experimenting with alternative swale designs that incorporate more gravel and less turf, potentially reducing nutrient runoff.

Conclusion: Fertilizer can be harmful to canal water quality.

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5. Misconception: The Tide Leveling Interconnect Project Will Solve Pollution

Claim: The Tide Leveling Interconnect Project will reduce nutrient levels in canals.

Facts:

- This project aims to improve water circulation across Marco Island's canal system.
- There is no direct evidence that passing water back and forth twice each day between two polluted water bodies is going to improve either one of them.
- While dilution may reduce localized concentrations, it does not eliminate pollutants at the source.

Conclusion: The project may help with circulation, but it is not a substitute for addressing the root causes of nutrient pollution.

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6. Misconception: Canal Aeration Will Solve Water Quality Issues

Claim: Air bubblers or aerators in the canals will significantly improve water quality.

Facts:

- A pilot program is reportedly underway to test the efficacy of aeration systems.
- While aeration can increase oxygen levels in fresh water, it does not remove nutrients, which are a primary concern.

- Marco Island has approximately 100 miles of saltwater canals—scaling aeration effectively across this system may/will be impractical and prohibitively expensive relative to any potential benefits.

Conclusion: Aeration may help in limited cases, but it is not a silver bullet for Marco Island's canal water quality.

7. Misconception: Reuse Water Used for Irrigation Doesn't Impact Canal Water Quality

Claim: Reuse water doesn't make it to Marco's canals.

Facts:

- Marco Island distributes between 1.8 and 2.4 million gallons per day of reclaimed wastewater for irrigation purposes. This translates to some 629 to 825 million gallons per year, with nutrient concentrations most recently averaging 7.1 mg/L of nitrogen and 3.6 mg/L of phosphorus.
- The result is an estimated annual deposit of nearly 50,000 pounds of nitrogen and 30,000 pounds of phosphorus onto the island's landscape. A significant portion of these nutrients inevitably makes its way into Marco's waterways, where these fuel harmful algal blooms, degrade water quality, and threaten marine life.
- The largest users of reuse water are the Island's 3 golf courses, the condominiums along Collier Blvd. and the City itself.
- Reuse water percolates through Marco's sandy soil to the canals.
- The City and its landscaper, Affordable Landscaping, overspray reuse water on streets and sidewalks which flow directly to the canals.

Conclusion: Reuse water is a major contributor to nutrient pollution of Marco's canals.

Final Thoughts

Improving and protecting Marco Island's water quality requires science-based strategies, ongoing monitoring, and a clear understanding of what causes pollution. Dispelling common misconceptions is a necessary step in fostering informed community action and ensuring that solutions are both effective and sustainable.
