

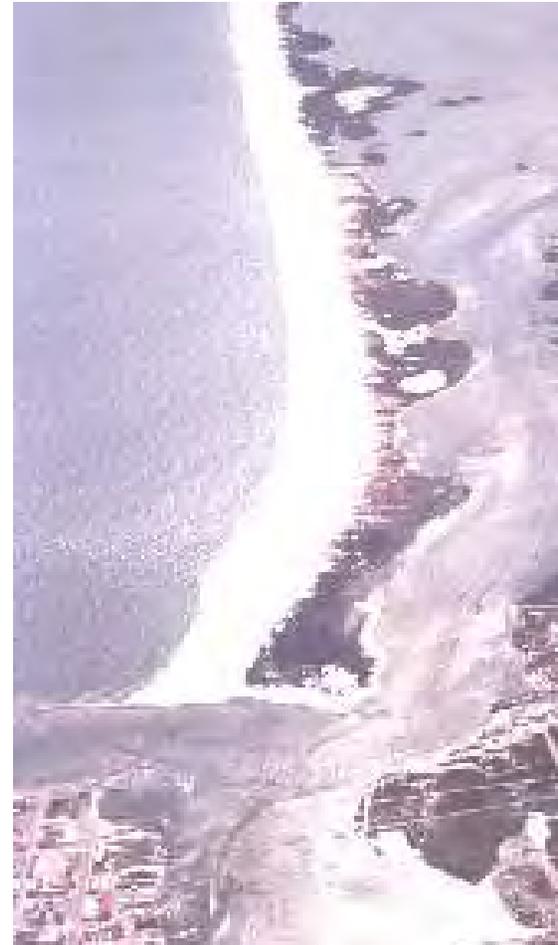


# Town of Ocean City Stormwater Program

Water Quality /Treatment

# Pre Existing Condition

- Under pre-development conditions, most stormwater is treated through either infiltration or natural filtering by wetlands and other vegetation
- Aerial photo of Assateague to the right. This photo demonstrates the original hydrology of a barrier island.



# Current Conditions

- As the Town was develop more and more impervious surfaces were created (where water doesn't infiltrate)
- More sources of potential pollution were introduced
  - Nutrients and other chemicals from home and lawn maintenance
  - Petroleum related chemicals from motor vehicles.
  - Biological pollutants from human and animal waste



# The Need

- Stormwater pollution is a major issue in Ocean City
- 100 percent of the runoff in Ocean City is urban with 75% impervious
- Increased pollutants with increased development and population
- With 10 million people visiting Ocean City every year, it is important to educate the population on how to minimize the potential for pollution and their impact to water quality
- Keeping the ocean and waterways clean is a key part in protecting Ocean City's economy.

**Tourism is the #1 industry**

# Stormwater Management Program

- The goal of good stormwater management program is to reduce runoff and treat stormwater on site.
- This reduces:
  - The run-off flow to the city system, reducing flooding (Quantity Management)
  - The amount of pollutants entering our bays and oceans (Quality Management)

# The Old Way



- Pave and drain to street



- Catch basins collect all storm water in underground pipes

- Discharge untreated directly to the Coastal Bays



# The Program

- The treatment and management of stormwater is the responsibility of everyone. Everyone has a part to play in the solution
  - Developers,
  - Property owners and residents,
  - Tourist, and
  - The Town

# The Developer's Responsibility

- Prevent and reduce soil erosion during construction
- All development and redevelopment over 5,000 sf must treat a portion of their runoff by infiltration
- Reduce runoff pollution at the site by at least 10% below the level generated prior to development
- Any disturbance greater than 250 must mitigate the impacts and it can be done by planting vegetations. Landscaping removes nutrients and slows the flow to allow infiltration.



# Best Management Practices

- Plant native landscaping and direct the runoff to the landscape areas.
- This allows the plants to naturally remove the pollutants in the run-off and thrive without irrigation.
- This reduces the burden on the city water AND stormwater systems
- Actually leans toward mimicking the natural hydrology.



# Best Management Practices

- Minimize runoff by maximizing pervious areas on the site.
- This allows the water to infiltrate into the ground and be naturally treated
- This reduces the burden on the city system



# The Property Owners Responsibility

- Be aware of potential pollutant from every day activities
  - Fertilizers, pesticides, herbicides, chemicals, and cleaners
  - Car washing
  - Pool draining
  - Power washing
  - Shoreline construction
  - Roof drainage
  - Landscaping choices
  - Don't put anything into the storm drain, you don't want to swim in later



# The Tourist's Responsibility

- Education and outreach
- Sensitize tourist on their impacts
- Eco-tourism getting them involved with cleanup and programs while they are here.



**The Ocean City Chapter**  
*"Please Leave Only Your  
Footprints"*



# The Town's Responsibility

- The Town enforces and implements the environmental ordinances for development which is not only during the process for new and redevelopment but for the long term maintenance and inspection of previously installed Best Management Practices
- Retrofitting the existing infrastructure with measure that help reduce flooding and treat for water quality. Pilot projects:
  - Pervious paver used on Town projects
  - Storm drain and Outfall retrofit
    - Wetland enhancement
    - Nutrient separating baffle boxes
    - Catch basin inserts



Mitigation funds were used to install pervious pavers on a Town road project.

# City Outfall Retrofits



63<sup>rd</sup> Outfall Retrofit

These types of retrofit can be install throughout the town

Provides for infiltration and water quality treatment



57<sup>th</sup> Street End Turf Grid

# Tunnel Ave Outfall Baffle Box



This outfall retrofit was a pilot project that treats 90 acres of urban drainage. Similar projects are needed throughout the Town.

# Catch Basin Inserts

- Another pilot project was done to test the feasibility of catching debris and trash at the catch basins. We purchase 35 and they had super performance.
- Maintenance is the only drawback. Maintenance must be performed twice a year and we don't have a program set up for such an endeavor



# The Town's Cont'

- Mini grant opportunities
  - BayScape Garden Grants
  - Beach District Grants
  - Rain Garden Grants
  - Rain Barrel Cost Share Program
  - Retrofit Cost Share Program
- Beach and street cleaning
- Storm drain stenciling
- Dune Patrol and community clean-ups
- Non-stormwater pollution prevention plans



# Future Goals

- Install retrofits to current Town infrastructure for water quality treatment.
- Storm drain cleaning program is a necessity in order to expand the outfall and storm drain retrofit program.
- More seed money (carrot) for cost share program in order for existing development to retrofit their property with Best Management Practices for water quality treatment and flood reduction
- To continue and possibly expand the mini-grant program

Trash and debris in stormwater



Care of premise and trash area of local businesses complaint/violation

Result of excess nutrients, swamp algae



Blocked and clogged storm drains result in street and property flooding



Maintenance, repair and replacement under funded