Importance of Master Planning

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WHERE and HOW we develop Land affects Water Quality!

43.2 Acres total
20 Homes
35.8 Acres of open space
Why Local Protection?

- Land Use Decisions - LOCAL
  - Greatly impact water and natural resources

- **Michigan Planning Enabling Act:** to promote public health, safety and general welfare.

- Local Government has authority to protect water and wetlands beyond federal and state government

- **Clean Water Goal –**
- **How it will be achieved?**
Why Plan?

• Community roadmap
  • What do we want our community to look like and be like in 20 years?
    ▪ Where are we going?
    ▪ How are we going to get there?
    ▪ How will we know that we have achieved our goals?

• To establish a policy document that guides the physical development of the community
  ▪ What does the community want to look like and be like in the future?
  ▪ Official documents that contains goals, objectives, and policies that express a vision about the future of the community
We care about water....

Drinking water

Swimming

Playing in the water

keep it BLUE.
The Master Plan

Master Plan – guide for where and how land is developed

- Identify & Map –
  Where are they?
  FUTURE LAND USE
  MAP!

- Values/Benefits –
  What functions do/did they serve?

- Goals/Policies
Goals

• Ensure streams, rivers, lakes and **wetlands** are clean and healthy.

• Protect wetlands and wetland **function** to protect water quality, mitigate flooding and provide aquatic habitat.

• Protect **and restore** wetland **areas** and their **functions**, thereby protecting and improving hydrology and water quality.
Objectives/Policies

• Update zoning ordinance to include natural features buffers
• Ensure natural features and water quality are considered during site plan review
• Encourage/provide incentives for open space developments and low impact development techniques.
Future Land Use Map
Identifying Opportunities for Protection and Restoration

Legend
- Existing Wetlands
- Lost Wetlands
- Agriculture
- Commercial
- Low Dens Res
- Med/High Dens Res
The Plan

1. visions
2. goals
3. objectives
4. policy

The Master Plan and Z.O. Connection

The Master Plan

The plan must provide clear, well supported vision and policies

The Zoning Ordinance

The ordinance must reflect the plan vision and policies
Filling the Gaps: Options for Local Protection of Lakes, Streams and Wetlands
Options for Local Protection

- Natural Features Setback
- Wetland Ordinances
- Site Plan Review
- Permit Coordination
- Stormwater Management
- Open Space/Conservation Design
- Septic Systems
Natural Features Setback
Natural Features Setback

- Minimum setback for structures/septic systems
- Vegetated buffer strip adjacent to water
  - Last Line of Defense - last opportunity to clean polluted runoff
- Lakes, Wetlands, Streams, Rivers

Over 60% of water pollution comes from runoff
Natural Features Setback

• How wide? Typical...
  – 25-50 feet – wetlands
  – 25-100 feet – lakes, rivers and streams
  – Consider current conditions
  – Customize widths
  – Applies to new construction or when a building permit is granted.
Natural Features Setback

Other provisions for setback area:
• Restrict clearing/trimming – except dead/diseased, path to access to water

• Require native vegetation in buffer area

• Restrict shoreline activities/alterations
  • One pier/dock per lot (50 ft in length)
  • Restrict sea walls and beach sanding
  • Restrict hazardous materials and uses
  • Restrict fertilizer use

• Limit construction footprint
  • 25% of total lot area or 10,000 ft²

• Limit impervious surfaces
  • 10-20% (reduce hardscaping, encourage pervious materials)
Natural Features Setback

Benefits

• Improves water quality
• Reduces damage from flooding/erosion/wave action
• Preserves aesthetic views
• Increases recreational enjoyment
• Reduces noise levels
• Increases taxable value
• Provides wildlife habitat
Homeowners Pay More for Buffers

• $6,858 to live adjacent to community-owned and open accessible riparian buffers.

• $1,625 to live in subdivision but not immediately adjacent to the buffer.

• Properties with 500-foot wide buffer zone sold for $2,500 to $3,800 more.

• Properties adjacent to open space sold for $4,600 to $6,400 more than properties without open space.
Other Options for Local Protection

• Site Plan Review
• Permit Coordination
• Stormwater Management
• Open Space/Conservation Design
• Septic Systems
Site Plan Review
Site Plan Review

- Require **EXISTING** natural features to be shown on site plan
  - Waterbodies (lakes, ponds, streams, rivers)
  - Wetland boundaries (size, type)
  - Large stands of mature trees
  - Hydric Soils
  - Topography
  - Floodplains
  - Others?
Site Plan Review Standards

- Restrict development in hydric soil areas and minimize impacts to wetlands
- Restrict removal or alteration of natural features/shorelines
- Preserve topography and natural drainage patterns (swales, low areas, wetlands, ponds)
- Encourage/Require Low Impact Development
- Explicitly state that applicants abide by county, state & federal laws
Incorporate Topography into design (utilize natural drainage patterns)
Linking Permit Approvals

Local approvals/building permits dependent on obtaining federal, state and county permits.

• Ensures issues are considered early in planning process
• Facilitates communication between agencies
• Inexpensive to administer
• Offers minimal protection to state/federal standards
• Significant decisions left up to state & federal agencies
• Most effective is used WITH other tools/options!
Stormwater Management
Stormwater Management

As little as 10% impervious surface cover within a watershed can cause water quality and habitat degradation.

FIGURE 1 - Relationship of Impervious Cover to Stream Health
Stormwater Management

- **Reduce** amount of runoff leaving a site by encouraging infiltration and **clean/filter** polluted runoff
  - Limit impervious areas (especially parking!)
  - **WATER – SLOW IT DOWN – SPREAD IT OUT – SOAK IT IN**
    - Require/Encourage low impact development techniques (rain gardens, swales, bioretention, green roofs, permeable pavement)
- Require routine maintenance
- Discourage use of natural wetlands to treat stormwater

[www.swmpc.org/lid.asp](http://www.swmpc.org/lid.asp)
Open Space/Conservation Design/Cluster Developments
Open Space/Conservation Design Developments

Traditional

Open Space Development

- Inventory/map special site features
- Building envelopes respect and retain special features
- Significant portion of the site protected as permanent open space
Considerations

• A by-right form of development

• Require open space (30-50%) for all PUDs
  – Explicitly require wetlands to be included in open space areas and are often not counted toward the required open space percentage.

• Allow for flexible site design criteria (setbacks, road widths, lot sizes)

• Provide Incentives for developers to preserve additional open space and conserve non-regulated lands (small wetlands, shorelines)
  – Density bonuses

• Protection provided by conservation easement, deed restriction, covenants
43.2 Acres total
20 Homes
35.8 Acres of open space
The Pokagon Development
- Minimized impervious areas (35 acres of open space (80%))
- Maximized infiltration & groundwater recharge

LID Techniques
- Narrow/porous roads
- No curb and gutter
- Porous trail surfaces
- Efficient floor plans
- Native plants/grasses
- Bioswales/rain gardens
- 80% Preserved open space

WATER
- SLOW IT DOWN
- SPREAD IT OUT
- SOAK IT IN
Clustered homes and 40% preserved open space
Enhancement and extensive buffering of wetlands and ponds
Site design to decrease number, length and width of roadways
Grass swales/open channels instead of curb and gutter, where feasible
Native vegetation plantings used for stormwater treatment and filtration
Sand and pretreatment filter systems for commercial parking areas

“Save It, Don’t Pave It” philosophy
Septic Systems
Septic Systems

• 10-25% failing systems

• Time of sale ordinance
  – Inspection required by certified professional
    • Can include well
  – Repair/replacement if needed
• Septic Maintenance District
  – Requires proof of maintenance submitted to municipality

It only costs about $150 every 3 years to maintain your system, while a new system could cost thousands!