# DEVELOPMENT TRACKING
# A GUIDE FOR HANCOCK COUNTY COMMUNITIES

Revised: August 1, 2005

## Residential and Commercial Electical Connections



Legend:
- Towns
- Water
- State Roads

Residential Electricity Connections
- 0
- 1 - 3
- 4 - 10
- 11 - 100
- 101 - 600

# Table of Contents

# DEVELOPMENT TRACKING:
# A GUIDE FOR HANCOCK COUNTY COMMUNITIES

## What is Development Tracking?

"Development tracking involves documenting changes in the landscape induced by human behavior.  In its most basic form, development tracking entails monitoring the construction of buildings and the extension of directly related infrastructure such as roads and utilities.  It may also entail the study of changes in how lands are used by humans, including changes in land cover related to changes in agricultural and forest management practices, changes in residence patterns from seasonal to year-round occupancy, and the aggregate effects of individual land-use changes on the character of communities." (*Development Tracking in Maine,* 2005)

## Why Track Development?

### 1.    Describing change in your community

We all know that Hancock County is growing rapidly.  As we travel our roads, we see new driveways and homes and businesses being built.   But no one has taken a comprehensive look of just where all this development is occurring.  Is it mainly along back roads, main roads, around lakes and the shore?  We need to answer these questions if we are to understand how development is changing our county and plan for the future.

### 2.    Knowing the impacts of development on your community

Not all development has the same impact on a town.  Development along a major highway may result in increased traffic flow problems. Homes built in a remote part of town may be difficult to provide with adequate fire protection and school bus service.  Development in a downtown or village area may help revitalize an area that has been largely neglected for several decades.

Under some circumstances development can have significant negative impacts on the natural environment.  For example, development may increase storm water runoff and threaten lake water quality.  Development may induce significantly longer single-passenger automobile commutes and consequentially increases air pollution and traffic congestion.

### 3.    Planning for Efficient Community Services and Infrastructure

Planning for services such as school bus routes and fire department substations requires information on where current beneficiaries live and where future beneficiaries will live.  Towns may have only one opportunity in several decades to build a fire station or new school house.  Choosing the right location for the present and for the future can make a significant difference in emergency response time and travel times for children riding school buses.

### *4.	Meeting state requirements for comprehensive planning grants*

Towns seeking State Planning Office comprehensive planning grants and plan update grants are asked to provide information on where new development has located since the last comprehensive plan was prepared.  The information in this brochure will allow towns to meet the State Planning Office (SPO) requirements.  The Hancock County Planning Commission (HCPC) staff is in regular contact with the SPO and can assist towns with any questions or problems.

### *5.	Knowing whether land use or growth policies are effective*

Development tracking is one of the most effective ways to learn if a town has an enacted a successful comprehensive plan.  Tracking data allow a town to evaluate how successful its plan has been in attracting development to its growth areas allowing towns to see if its land use strategies are effective or if they need adjustment.

Towns that have received comprehensive plan update grants are under a contractual obligation to track development "in a manner that allows for the evaluation of the effectiveness of the local growth management program."   This requirement can be met by determining how much development has taken place in the growth and rural areas.  If your review shows that relatively little development has occurred in the areas the comprehensive plan designated for growth, the plan's effectiveness may need to be reviewed.

If you have zoning, your town can also determine if it has set aside an adequate amount of land for commercial and manufacturing development.  If there is too little land, such development may be constrained.  If there is too much, there is the risk of sprawl-related problems emerging.

## When Should Development Tracking Take Place?

The Hancock County Planning Commission recommends that it be done on a yearly basis. Tracking development less frequently increases the risk of missing trends.  Annual tracking permits charting year-to-year changes in order to get a bigger picture of what is happening. Towns that have signed a comprehensive plan contract with the State Planning Office should plan on tracking development annually for at least ten years into the future.  As we will point out, some data employed in development tracking come through a town office on an almost daily basis.  Attempts at continual tracking will prove burdensome for many towns.

## Who Should Take Charge of Tracking Development?

Most towns experience turnover in staff, with each new employee presenting a different mix of interests and skills.  Therefore, it is important that the process be relatively easy to accomplish for a generalist.  For smaller towns, the code enforcement officer is probably the best person for the job.  To assure continuity, the town may want to include the tracking of development in the

job description for that position.  There is a state requirement for all towns to have job descriptions for their code officers so this a good place to have a reminder. Sample job descriptions are available from the HCPC. Town planners, assessors, planning board members or others who are familiar with growth patterns in the community may be important local resources as well. Towns may also want to develop their instruction guides based on the information contained in this booklet.

# How Do We Track Development?

## 1.    Choose your method

Each town is encouraged to develop its own system. Your choice will depend upon how you intend to use the information.  This brochure describes several methods.  Any of these can be combined to provide more information or to answer more specific questions. Three basic approaches should be considered.

Administrative Records: Much of what you want to know can be learned without maps, but the information is somewhat more difficult to interpret.  Assembling town records such as development permits and tax assessment data will permit you to quantify how much land is being converted and the physical addresses of the new development.

Paper Maps: Most towns in Hancock County use paper maps as a means of organizing information on taxable land, land use and zoning, public services and so on.  Provided you can get these maps on the same scale, you can manually overlay one on the other to identify development patterns and their impacts.

Digital Maps: Geographic Information Systems (GIS) is the method of choice for most large cities and is finding greater acceptance even in relatively small towns.  A GIS essentially combines the two approaches above by putting town data into tables, like spreadsheets, and linking the tabular information to specific locations. For example tax data such as owners name, phone number and valuation can be linked to that parcel. Clicking on the parcel on the computer pulls-up the tax data.  Conversely, clicking on the tax data will cause the computer to highlight that specific parcel.  All of the analyses described below can be accomplished with GIS provided you have the software and that the database and maps are themselves digitized.

## 2.    Gather data

There are several data sources than can help you to track development in your town.  Your choice of data will depend on your goals for tracking development, availability of information that is updated annually and the amount of time you have to conduct your analysis.

## a.    Information on Maps and Images

Tax Maps: One of the most important tools is a good set of tax maps.  Tax Maps are particularly helpful if they have been digitized.   Towns that don't have in-house capacity to produce GIS (geographic information system) maps could contact their tax mapping company or the Hancock County Planning Commission for assistance.

Comprehensive Plan Maps: Another important tool is a set of comprehensive plan maps. These maps, which indicate soil conditions, wetlands, historical and archeological areas and more, will help you to understand the potential impacts of development on natural and social systems.  For instance, towns may discover that development may someday threaten an important underground aquifer or lead to significant disruption of traditional resource-based occupations.  These maps should also show growth, rural and other areas as indicated in the comprehensive plan.

Maine Office of GIS Maps: The Maine Office of GIS (MEGIS) maintains a large archive of current and historic maps.  These digital maps require special software to be used. HCPC can provide you with a free copy of ArcExplorer, or you can download it from the Internet at www.esri.com.

MEGIS maps include:

- E911 Road Maps
- Water resources maps – coastline, ponds, streams, underground aquifers, and more.
- Environmental maps – wetlands, animal and plant populations, important habitats
- USGS Topographic Maps and aerial photographs
- Utility usage data – location of electricity customers is now being organized statewide. These data for most of Hancock County are provided by Bangor Hydro Electric.  There is not historical data, so this source will only be helpful looking forward from 2005.

## b.    Information in Town Records

Towns have several resources to help them with this phase.

Building Permits: Some towns have building permit or certificate of occupancy records that indicate which permits are for new construction and if the units were actually built.

Assessors Records:  Some towns include when structures were built as part of the assessors records.

Subdivision Permits: Since all subdivisions and site plan applications and some building permits are subject to planning board review, the planning board is another source.

Code Enforcement Officer/Local Plumbing Inspector Records: The code enforcement officer may also have valuable information based on the permits that have been issued.   This will depend on local practices regarding building permits.

## 3. *Analysis*

Your choice of analysis depends upon your use of the findings and the data that you were able to gather. This section presents options based upon common development tracking needs.

### a. <u>Describing Change in Your Community</u>

A relatively low-tech method for identifying where development activity is occurring in your community is to overly tax maps. By placing last year's map on top of this year's map on a light table or other source of light, you can find new lines indicating where parcels have been subdivided. Using tracing paper as a top layer, you can trace in only the new parcels or write in the map-lot numbers. This process works when you have maps printed on the same scale using the same size sheets of paper.
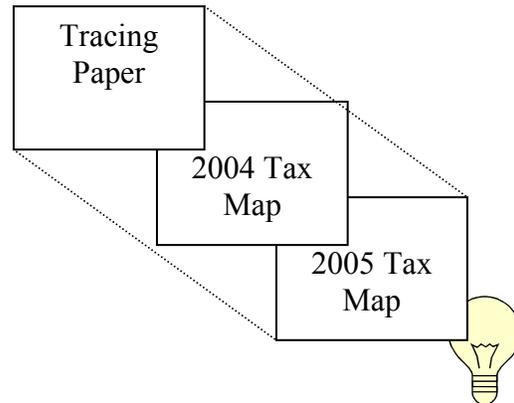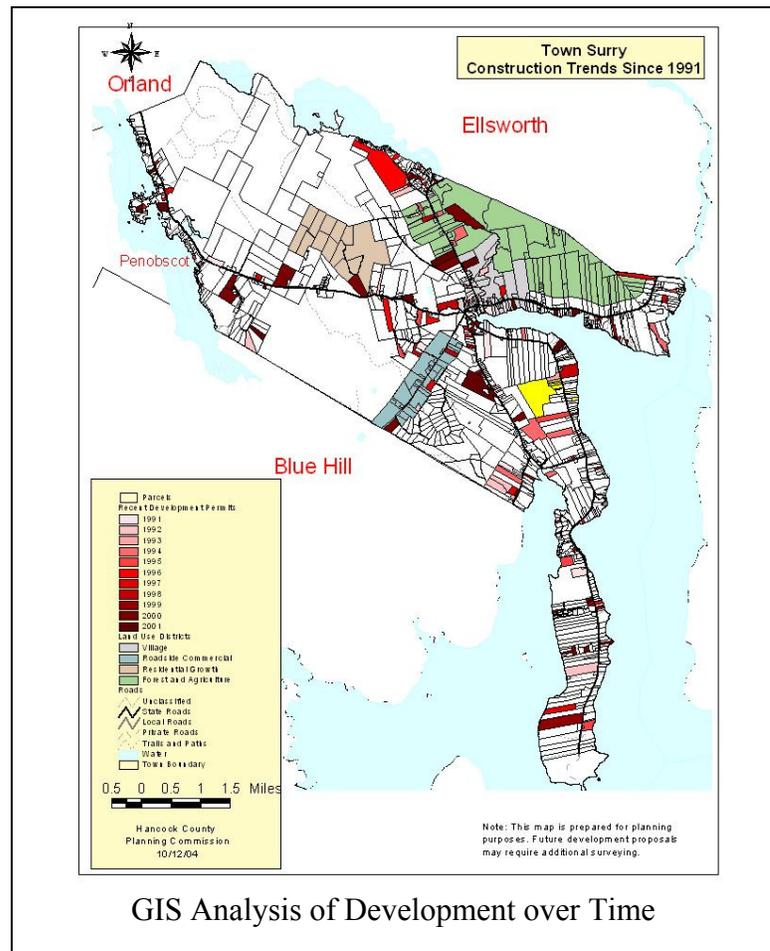


Sample of Map Overlay Process

The overlay process is also possible using Geographic Information Systems (GIS) software provided the tax maps have been digitized. Very often the digital maps will actually include the date that a new parcel was created. In this case the entire process is much easier.

Figure 2 illustrates a GIS development tracking map for the Town of Surry. The map indicates the year that building permits were issued for new structures.

### b. <u>Assessing Impacts of Development</u>

Development pressure on towns throughout Hancock County is greatest along the marine, lake, pond and river shorelines. These "view" properties exist within a national market for seasonal homes and businesses and command high prices. In many cases development on these parcels



GIS Analysis of Development over Time

presses up against environmentally and culturally sensitive areas.

Identifying potential environmental impacts of development is a variation of the manual map overlay process spelled out above.  If you are working with paper maps, you can overlay environmental maps, such as shore lands and wetlands above the map created on tracing paper that shows new developments.

The overlay process will permit you to note where development has occurred in environmentally sensitive areas and consider whether additional policies may be justified to mitigate the negative impacts of this sort of development.  For example, a large subdivision in a sensitive watershed may increase phosphorus runoff and potential long term contamination of drinking water. Mitigation can include requirements for vegetative buffers and catch basins.

In addition to environmental impacts, you may want to consider impacts on traffic volumes.  A common assumption is that a residence generates 10 trips per day.  A new subdivision of 20 units would be assumed to generate 200 trips per day.  In addition to added traffic volumes, additional congestion may result if development includes multiple access points on state highways or includes businesses that generate higher numbers of trips.

### c.    Planning for Community Services

Community service planning may include schools, emergency response, transportation, water supply, sewer systems, and more.  Most of the towns in Hancock County have very limited service capacity with one or no schools, no police



Sample of Environmental Analysis
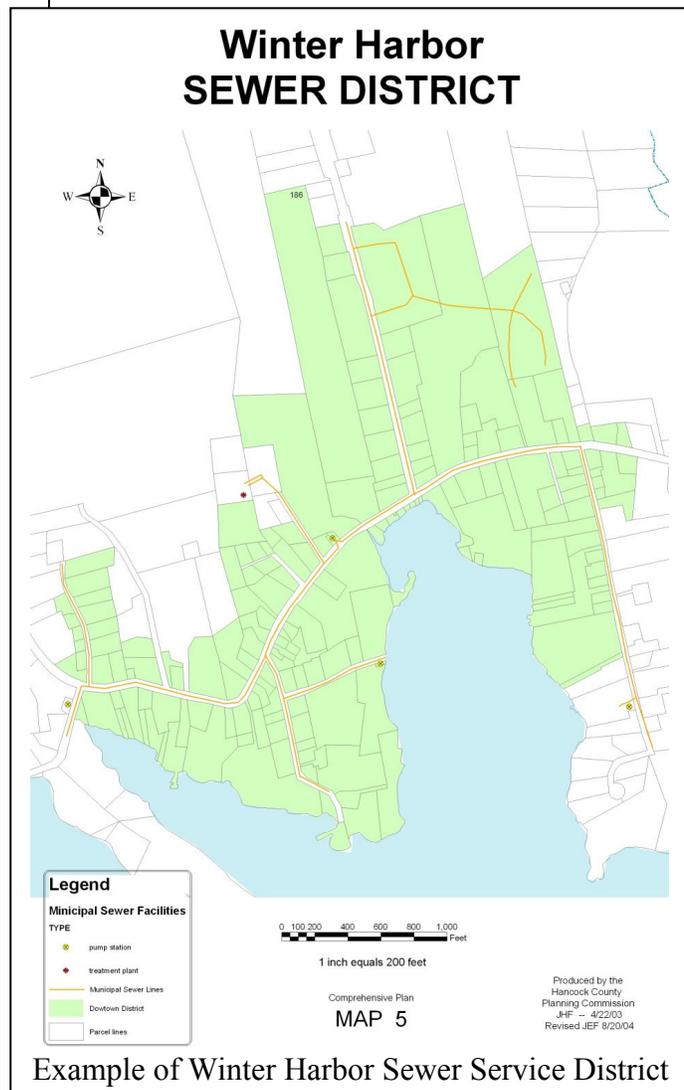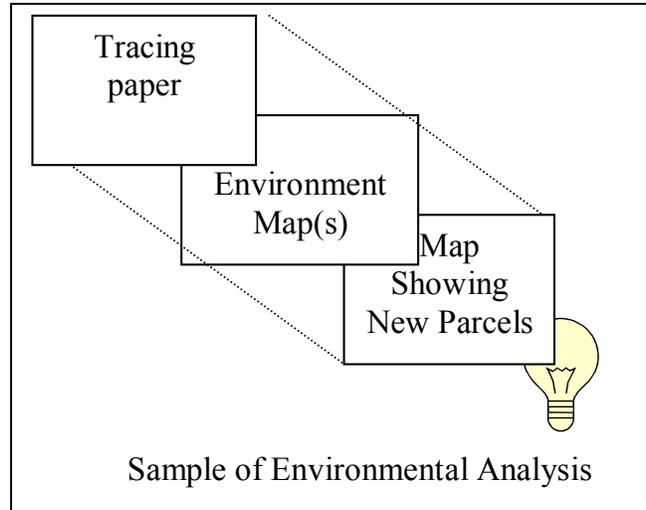


Example of Winter Harbor Sewer Service District

department, no water or sewer services and no transit system. Towns that do provide these services may only gradually come to realize the added cost of development base on location. New homes located down long unpaved driveways can prove very challenging for ambulance, police and fire response during winter and early spring. With only one or two school buses, children are often made to ride long, circuitous trips as buses reach out to widely dispersed homes.

Anticipating the costs of development is facilitated by overlaying the network of current services and new development. Maps of the existing network of community services can include water and sewer lines, fire stations, school bus routes and so on against new development. Decisions of where to extend services should always consider both current and anticipated users. The creation of service districts will simplify your analysis.

## d.     Meeting State Requirements for Comprehensive Planning and Measuring the Effectiveness of Local Policies

Towns seeking comprehensive planning update grants are asked by the State Planning Office to indicate where development has occurred in relationship to the land use districts created during the previous comprehensive plan. For instance, plans should indicate growth areas and rural areas. If development tracking indicates that significant growth was occurring in rural areas, then the town needs to re-examine its future land use plan and add strategies to steer development into growth areas.

If local administrative records or tax maps have sufficient information, then growth can be segmented according to growth and rural areas. The sample format used in Table 1 can be used to aggregate number of units built or acres of land added or removed from each of these classifications. Since some towns have areas that are neither growth nor rural, the "other" category is used in this table. Each town should adapt this table to reflect its particular circumstances.

| Table 1 Year-by-Year Development Trends, Town of Moonshine Mountain, Maine Number of Units Built | | | | |
|---|---|---|---|---|
| Year | Growth Areas | Rural Areas | Other Areas | Total |
| 1994 | | | | |
| 1995 | | | | |
| 1996 | | | | |
| ........ | | | | |
| 2004 | | | | |
| Ten-Year Total | | | | |

While these data sources provide general information as whether development locates in a growth or rural area, they do not show where on a lot building has taken place. If the development is on a relatively small lot (under two acres), this is not a problem. In the case of larger lots, it is helpful to know where development is occurring. For example, if only a small

portion of a 20-acre lot is developed, this means that the rest of this lot may still be available for development.

One way to track the location of new buildings on a lot is through a windshield survey. This involves driving through areas where new development has occurred and marking where on a given lot the development is on a map that shows property tax parcels. In some cases, planning board members or the code enforcement officer (CEO) may be able to fill in this information from their personal knowledge.

These methods also do not show other changes in land use. Perhaps most important is new roads. A long road into an undeveloped area may open land for further development. One source of road information is E911 road mapping. Here again, the planning board and CEO may already know where many new roads are.

Other changes may include timber harvesting or abandonment of farmland. Each town needs to decide on its own what sort of changes it needs to track. The comprehensive plan should be helpful in making this decision. For example, if the plan contains extensive recommendations on forestry management, the town may want to track changes in timber harvesting. The Maine Forest Service has records on major timber harvesting and sends copy of its permits to the municipal office where the harvest takes place.

A computer inquiry can search the record to list all buildings constructed over a ten-year period. The inquiry should be structured to assure that one is not counting low value structures such as sheds or renovations and expansions as new construction. These data can be placed on a map that indicates growth and rural areas and also placed in a table.

Finally, you may find supporting data from outside of town records. Electrical utility companies are now providing annual updates to MEGIS that indicate the number of residential and commercial electrical service connections based on a 500-meter grid. The Hancock County Planning Commission will be happy to assist you in creating a utility customer map of your town.

## 5. Archive your findings

### a. Preparing for Development Tracking in the Future

Building permit forms new construction can be adjusted to facilitate the mapping of future development. *(see Appendix I)*. The form can indicate if the permit is for a growth, rural or other area. It can specify setbacks from various sides of the lot. It is important to have a place to indicate that the building was actually built. Sometimes the person receiving the permit may be unable to carry through with construction. The data gathered through the permits may be marked on a map according to growth and rural areas. Tables similar to the one above may be used to summarize development on a yearly-basis.

**b.**    **Sending a Copy of the Report to the HCPC**

This is entirely optional. It is recommended for towns that may ask for HCPC assistance in preparing any future SPO grant applications for comprehensive plan funding. In many smaller towns, it is hard to keep track of records as town personnel change. The HCPC serves as a handy storage location.

# Additional Resources

The individuals tracking development need to know the quality of assessing and building permit records. Are they up to date? Are they legible? It is useful to review a year's worth of building permits before starting to track historical development. In some towns it is difficult to distinguish between an expansion and new construction.

There are also several outside agencies that might be helpful. For example, the regional planning commissions have been active in preparing development tracking methodologies. The Hancock County Soil and Water Conservation District may have recent aerial photographs. The State Planning Office has a number of useful publications.

**Addresses**

Hancock County Soil and Water Conservation District
190 Bangor Road, (Route 1-A)
Ellsworth, ME 04605
Phone: 207-667-8663

Maine State Planning Office
38 State House Station
184 State Street
Augusta, ME 04333
Phone: 1-800-662-4545
http://www.state.me.us/spo/

**References**

Development Tracking in Maine: Documenting the Changing Landscape, State Planning Office
      Development Tracking Steering Committee Report, Augusta, Maine (March 2005)

**APPENDIX I:**

# SAMPLE BUILDING PERMIT

# SAMPLE
# ZONING PERMIT APPLICATION

PERMIT # \_\_\_\_\_-_____          DATE_____

MAP # _____ LOT #_____          FIRE ROAD #_____

The undersigned applies for a permit for the following uses. said permit to be issued on the basis of the information contained within this application.  The applicant hereby certifies that all information and attachments to this application are true and correct.

1.      Applicant

        NAME_____

        ADDRESS_____

        _____

        ZIP CODE_____

        TELEPHONE_____

2.      Owner

        NAME_____

        ADDRESS_____

        _____

        ZIP CODE_____

        TELEPHONE_____

3.      Property is zoned as?  (town to add various zones here when adjusting permit to reflect local conditions)

4.      Is property part of a subdivision?  Yes_____     No _____

5.      Proposed Uses?

      A.    Residence – Seasonal_____
      B.    Residence – Year-Round_____
      C.    Addition to Residence _____
      D.    Other-

(Explain)_____

6.      Type of septic system?

   _____

      Date Installed?_____

7.      Lot Width  (in feet)  _____

      Lot depth    (in feet)_____

      Lot area  (in acres or portion thereof) _____

8.      Percent of lot covered with structures?_____%
      (this includes residence, garage, sheds, driveway & septic system)

9.      Site Plan.  Illustrate the following information about the lot and the proposed use of the lot on a scale drawing.  Please use graph paper.

      A.    Lot dimensions?
      B.    Names of abutting property owners and location of right-of-way. public and private.
      C.    Exact location of existing and proposed building and distance from high water line?
      D.    Location of septic system and water supply?

10.   A.    Attach a copy of plumbing permit.

To the best of my knowledge, all information on this application is true and correct. All proposed uses will be in conformance with all the state and local ordinances.

Signature _____ Date _____

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
The following items are for town use only

Permit Approved_____

Permit Denied_____
Condition and/or Safeguards_____

_____

_____

_____

_____

If approved, Date Certificate of Occupancy Issued: _____

Location per comprehensive plan: ___ growth area  ___ rural area ___ transitional area

Planning Board Member Signature_____

Code Enforcement Officer's Signature_____

Date_____