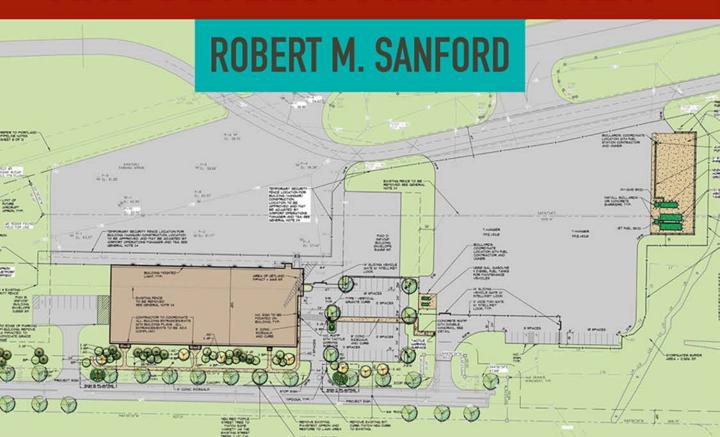


# ENVIRONMENTAL SITE PLANS AND DEVELOPMENT REVIEW



### ENVIRONMENTAL SITE PLANS AND DEVELOPMENT REVIEW

The most effective way to participate in land stewardship and environmental management is to get involved in the review of proposed developments. In smaller communities, this review is primarily done by a planning board or commission made up of volunteer members, guided by professionals in certain aspects such as traffic, historic preservation, civil engineering, water supply, and wastewater disposal. In larger communities, professional planning staff, with the assistance of municipal engineers, conducts the review, which will then be presented to the planning commission. In either case, everyone—officials, volunteers, reviewers, consultants, neighbors, and the public in general—needs to know what is being proposed. The site plan itself is the primary tool for understanding the proposal.

Environmental review is not an easy task, even for consultants and professional planners. There is a need for a general guide that presents the design, infrastructure, and environmental issues to address, what a reviewer needs to know about these issues, and how to interpret them. The book points the reader to accessible, low-cost resources to aid in the review process. In these times of climate change, rising populations, energy challenges, and economic turmoil, there is a real need for development to occur in as efficient and environmentally responsible a manner as possible. Citizen review is a critical step in the approval, alteration, or denial of site plans for land subdivision and new development. Hence, informed participants in the review processes are more important than ever.

This book is designed to assist professional archaeologists, environmental consultants, and others interested in construction, development, and other physical land alteration that must go before some sort of review board. The book is also suitable for college undergraduates and graduate students in fields that bring them into environmental development of sites. And it is useful for neighbors and other members of the public who want to understand proposed land development in their neighborhood.

**Robert M. Sanford** is Professor of Environmental Science & Policy and Chair of the Department of Environmental Science & Policy at the University of Southern Maine in Gorham, Maine. He has a Bachelor's degree in Anthropology from State University of New York College at Potsdam and a Master of Science and PhD in Environmental Science & Planning from the State University of New York College of Environmental Science & Forestry at Syracuse. He is the author of *Reading Rural Landscapes* and the co-author of *Cultural Resources Archaeology, Practicing Archaeology*, and other books.



# ENVIRONMENTAL SITE PLANS AND DEVELOPMENT REVIEW

Robert M. Sanford



First published 2018 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge

711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2018 Robert M. Sanford

The right of Robert M. Sanford to be identified as author of this work has been asserted by him in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data A catalog record has been requested for this book

ISBN: 978-1-62958-477-5 (hbk) ISBN: 978-1-62958-478-2 (pbk) ISBN: 978-1-315-15847-1 (ebk)

Typeset in ApexBembo by Apex CoVantage, LLC

#### **CONTENTS**

	List of Illustrations Acknowledgments	
	Introduction	1
PART I An Overview of the Subdivision and Land Development Process		
1	The Review of Subdivision and Land Development Plans: Why and How	7
2	Selection and Review of the Site Location	22
3	The Content of the Site Plan	34
	RT II ements in the Review of Site Plans and Development Proposals	51
4	Air Quality and Site Plan Review	53
5	Water Resources	61
6	Water Supply	88
7	Soils, Soil Erosion, and Topography	96
8	Septic Systems	109
9	Traffic	118

10 Energy	134
11 Public Services	143
12 Aesthetics	155
13 Noise Impacts	175
14 Historical and Archaeological Resources	183
15 Plants and Wildlife	192
16 Agriculture and Forestry	199
17 Coastal Resources	204
PART III Summary: The Sustainability Imperative 2	
18 Successful Site Design and Review	215
Glossary Index	223 234

#### **ILLUSTRATIONS**

#### Figures

1.1	The subdivision and land development review process, which involves sketch plan review,	
	preliminary plat review, and final plat review	14
1.2	The sketch plan is a preliminary representation to give everyone an idea of the project's	
	physical configuration	15
1.3	An example of a preliminary plat	17
1.4	A final plat	19
2.1	Sample site selection matrix	23
2.2	Sample overlay maps of constraints and opportunities	25
2.3	Characteristics of sprawl include large-lot developments, fragmented open space,	
	automobile-dependent land use, densities lower than town and urban centers,	
	extension of public infrastructure and services to undeveloped areas, lack of public	
	spaces and community centers, large paved areas for roads and parking, low economic	
	and social diversity in residential areas, and repetitive "big box" buildings without	
	distinctive character	29
2.4	Central places	30
3.1	Sample location map	36
3.2	Sample title block	37
3.3	Site plan portion, showing contours with labeled topographical characteristics such	
	as steep slope, shallow slope, drainage area, existing features, and lot numbers	39
3.4	Reserve area designated on a site plan	42
3.5	Examples of easements and rights-of-way on site plans	44
3.6	An architectural elevation	47
3.7	County of Nevada, California, Community Development Agency, Building Department,	
	building submittal and site plan requirements	48
5.1	Section of site plan showing a buffered and landscaped project near a watercourse	
	and shoreline with conditions labeled	62
5.2	Annotated portion of site plan showing treatment of surface water runoff before it	
	enters receiving waters; site provides water collection and treatment	65
5.3	Annotated site plan segment: a shoreline project with boat dock	69

#### viii Illustrations

5.4	Pond construction should be labeled to show issues; remedies; stabilization; 3:1	
	or better bank; and details for substrate, seed, mulch, mowing restriction, time of	
	year for best construction, type of construction equipment, and other key aspects	70
5.5	Annotated section of a development site plan with wetland details/mapping on it	72
5.6	Plan detail of wetlands enhancement plantings, using selected indigenous species	
	with notes about when and how planted, size of stock	74
5.7	Mitigative wetland to be constructed as an on-site or off-site enhancement	77
5.8	Sample buffer widths and water quality protective functions	80
5.9	Stream crossings should be "stream smart"	81
5.10	Mapped groundwater	83
5.11	Sources of groundwater contamination for a project might include a pumping well,	
	gravel pit, waste lagoon, road salt stockpile, landfill, sewer/septic, hazardous waste	
	injection well with leaky casing, agricultural spreading of pesticides and fertilizer,	
	fuel and solvent tanks above and below ground, industrial supplies, and illegal	
	or improper dumping of waste	84
6.1	Michigan Department of Environmental Quality water supply checklist	89
6.2	Idaho Department of Environmental Quality water well site and spring source	
	evaluation checklist	91
6.3	Above-ground cistern, Norwesco 5000 gallon	92
6.4	Wellhead detail from site plan	93
6.5	Sample site plan location of wellhead protection area	94
7.1	Soil texture triangle	97
7.2	Soil profile	99
7.3	Portion of a soil erosion control plan	102
7.4	Stone check dam detail on erosion control plans	103
7.5	Grading plan and section	104
7.6	Stormwater requirements checklist used by the City of Berkeley, California	107
8.1	Missouri site classification scheme	111
8.2	Sketch of a mound system	112
8.3	Diagram of in-ground system design	113
8.4	Septic system contamination isolation/remediation plan	116
9.1	Example of a development access	120
9.2	Sample excerpt of traffic study showing DHV and related terms calculated	404
0.0	for a particular project	121
9.3	Excerpt of level of service (LOS) report for a site	122
9.4	Site plan excerpt of a parking configuration designed to promote safe flow,	101
0.5	walkability, and aesthetics	124
9.5	Diagram of difficult intersection design	125
9.6	Labeled road profile matched to road plan	127
10.1	Site configuration for good solar gain	135
10.2	Energy system plans for energy code compliance	139
10.3	Sample subdivision site plan that incorporates energy-saving features	140
12.1	Viewshed map, showing what can be seen from the project site and views	456
10.0	of the project site	156
12.2	Aesthetic considerations in appearance of a proposed building	158
12.3	Schematic representations of form, line, texture, scale, and space	159
12.4	Example of lighting direction	160
12.5	Pattern diversity and complexity for use in visual description	161

		Illustrations ix
12.6	Dominance and compatibility in a visual setting	161
12.7	Aesthetic mitigation addressing visual elements	163
12.8	Visual impact mitigation through use of distance, topography, and plantings	
	as factors in successful screening	164
12.9	Sample portion of landscaping plan and planting details	167
12.10	Example of isochrone lighting diagram for a large project	169
12.11	Mitigative lighting details	171
13.1	Noise contour diagram for airport expansion	179
14.1	Historic resources and protective buffers identified on site plan	189
15.1	A detail of the plant species and foundation planting scheme for a commercial structure	e 195
15.2	Wildlife buffer designated on a site plan	197
17.1	Coastal land includes upland and protected shoreland; it can be cove, river outlet,	
	freshwater or brackish wetland, high marsh, low marsh, tidal flat, and territorial seas	205
17.2	Shoreline stabilization structures	208
17.3	Example erosion control detail for bioretention cell, which helps stabilize shoreland	
	and other areas susceptible to sheet surface water flow	210
18.1	The design-review relationship	216
18.2	The product of successful design and review, this built-out project fits in its place	221
Table	s	
1.1	The contents of a subdivision ordinance	8
2.1	Sample existing natural factors checklist	26
2.2	Sample social/cultural factors checklist	26
2.3	Sample client factors checklist	27
4.1	Henning odor classifications	55
4.2	Options for controlling dust on construction roads	56
4.3	Sample mitigation evaluation matrix for noise at a quarry operation	58
5.1	Sample checklist of potential problems and issues in ponds	71
5.2	Sample wetlands review checklist for use as guide if reviewing entity does	
	not have its own	76
5.3	Sample checklist of prevention measures, including Low Impact Development	
	(LID) techniques	85
5.4	Checklist for a stormwater management plan	86
7.1	Sample checklist for a soil engineering report	99
7.2	Checklist for erosion control plans and details	101
7.3	Factors to consider in control of erosion through vegetation	103
7.4	Erosion and sediment control checklist for site inspection	105
7.5	Contents of a stormwater management plan	106
8.1	Sample recommended minimum isolation distance table for septic systems	112
8.2	South Dakota Check-Sheet for Individual and Small On-Site Wastewater Systems	
	(South Dakota Department of Environment & Natural Resources http://denr.sd.	
	gov/des/fp/septic.aspx)	114
9.1	Sample checklist for applications involving transportation review or permits	119
9.2	Sample checklist for transportation construction plans	119
9.3	Outline of a typical traffic study	129
9.4	Transportation-related questions to ask about the overall project	131
10.1	Sample checklist for energy-efficient sites	136

#### **x** Illustrations

11.1	Fire and emergency department questions for project review	145
11.2	Police department checklist for project review	145
11.3	Highway department review questions	146
11.4	Sewer and water checklist	146
11.5	Steps in Per Capita Multiplier method of fiscal impact analysis	148
11.6	Steps in the Case Study Method of fiscal impact analysis	148
11.7	Example of impact fee calculation for educational services in Windham,	
	NH (Windham, 2001, www.windhamnewhampshire.com)	149
11.8	States and territories with statutory authority for impact fees	150
11.9	Sample school impact fee from Hillsborough County, Florida	151
11.10	Sample list of facilities financed by impact fees	151
12.1	Visual impact assessment worksheet (Based on the rating scheme used by the	
	Federal Bureau of Land Management, Manual 8431.)	163
12.2	Items to address in reviewing a landscape plan	166
12.3	Aesthetic restrictions for signs	168
12.4	Checklist of issues for lighting	170
13.1	Sample decibel levels	176
13.2	EPA/OSHA standards for permissible noise exposure	176
13.3	HUD noise preference levels	176
13.4	Sample options for noise mitigation at a gravel pit with a crusher or screener and	
	with an increasing extraction rate	180
13.5	HUD "walk-away" test	181
14.1	Contents of an archaeological or historical site assessment or survey report	187
15.1	Categories of concern for plants and wildlife impacts	193
15.2	Steps for wildlife mitigation	198
16.1	Checklist for review boards to evaluate site plans for agricultural and forestry impacts	202
17.1	NOAA matrix of habitat factors compared with human coastal activities	211

#### **ACKNOWLEDGMENTS**

Appreciation and gratitude to Dr. Tom Daniels of the University of Pennsylvania and Dana Hanley, Director of Development, Essex, Vermont. My thanks to Dr. Mark Lapping, Dr. Daniel Martinez, Dr. Joe Staples, and Dr. Travis Wagner, University of Southern Maine (USM). Thank you to USM alumni Matt Borden and Megan McLaughlin for comments and suggestions. Thank you to Dr. Karen G. Harry, University of Nevada, Las Vegas, for reviewing the chapter on historical and archaeological impacts. Thank you to Peter Burke; Lindsey Weeks; Dr. Garrett Cook; Brad Krotzer of CSI Custom Septic, Inc.; Heather True of Cumberland County Soil & Water Conservation District; Anna Almaroad of Plastic-Mart, Inc.; and Chris, Morgan, and the gang at Sebago Brew Pub. As always, thank you, Paul F. Miller. Special thank you to Robin A. Sanford. Thanks to Barry Sheff, P.E., of Woodard & Curran, Inc. and Owens McCullough, P.E., and Emmerald Irvin of Sebago Technics for help with figures, many of which are from plans developed by their companies. Much appreciation to my students at the University of Southern Maine. I would also like to express my gratitude to the fine editorial team at Routledge, Taylor & Francis Group, and their associates.



#### INTRODUCTION

Growth and change are two hallmarks of America's cities, suburbs, and rural landscapes. In 1990, there were 248 million Americans. As of 2016, there are 324 million of us. It is like adding a large city every year. The U.S. Census Bureau has projected that by 2050, the nation's population will exceed 420 million. Thus, over the next 40 years, local governments will have to make many decisions about where new houses, stores, factories, schools, and offices should be located, and how they will be serviced by roads, mass transit, sewer and water facilities, and police and fire protection. Developers and landowners will propose projects that subdivide land parcels into smaller lots for eventual sale and will submit plans to develop land for commercial, residential, and industrial uses. Some of these proposals will be aimed at redeveloping urban areas; other proposals will seek to develop "greenfield sites" in the suburbs or countryside.

Local governments—cities, counties, villages, or townships—are usually required by law to review site plans that show proposed subdivisions (the creation of two or more lots) and land development plans to construct buildings. The reasons are simple:

- To protect the public health, safety, and welfare according to the Tenth Amendment to the United States Constitution. That is, new lots created by subdivision and existing lots should be able to support new buildings with minimal risk of natural hazards;
- 2. To require certain infrastructure (such as sewer, water, streets, sidewalks) of all developers according to the equal protection clause of the 14th Amendment;
- 3. To create a system for the legal creation and sale of lots; and
- 4. To help implement the goals and objectives of the local government's comprehensive plan—the blue-print for growth and development.

Recently, the concept of sustainability has enjoyed widespread popularity. Sustainability implies the stewardship of land and community resources so future residents can enjoy a quality of life at least as good as that enjoyed by current residents. Sustainability has three related components: economic, environmental, and social sustainability. Sustainability is best thought of as a direction to move toward rather than a goal to reach. Thus, the subdivision of land and the development of land into houses, stores, factories, and offices should occur in such a way as to minimize impacts on the environment—especially on air, water, and wildlife habitats—to create well-paying jobs over the long-term, and to promote a mix of land uses and residents of differing incomes. All too often, the review of subdivisions and land development plans has been done with an eye toward how much property tax revenue (or sales tax revenue in the West) a development will

generate. This is short-sighted and will result in traffic problems, such as congestion along highways with strip commercial outlets, as well as separating wealthy landowners from less wealthy residents.

Keep in mind that the review process is primarily meant to help the landowner or developer come up with an acceptable subdivision or land development plan. Another purpose of the review process is to weed out development proposals that would jeopardize community identity, create large public service costs, or cause heavy pollution loadings. Often, however, some local governments use the review process as a way to delay making a final decision about a particular development. A local government may ask for one or more expensive studies about the traffic impacts, fiscal impacts, or environmental impacts expected from the proposed development. Or they may ask the developer to provide a different design of the development. Such studies or designs may be legitimate, but they mean time and money to a landowner or developer. In some cases, a developer may decide to withdraw a development proposal because of the escalating costs of obtaining an approval.

This book should be a quick reference for environmental consultants, planners, project reviewers, developers, non-profit organizations, students, and the general public about the subdivision and land development process and the information a site plan should contain. This information will help decision makers evaluate the likely outcomes of a proposed development. In particular, the reviewer of a site plan proposal needs to decide whether to approve the proposal unconditionally as presented, to approve the proposal with specific conditions the landowner or developer must meet, or to deny the proposal.

Part I provides the reader with some general information about the subdivision and land development process, where and how development sites get chosen, the content of site plans, and general principles and practices for reviewing site plans.

In Part II, the actual impacts caused by the development projects are examined. What a development does to the land is hard to undo. Native Americans conceived the idea that the changes we make to the landscape generally have consequences for at least seven generations. Planning commission members and planning staff, as well as the developers and designers of projects, have a responsibility to determine the imprint that a generation will leave on the land. When we enter a community with a visual coherence, a balance between structures and open space, smoothly flowing traffic, and a mix of business and housing opportunities, we know that planning is working. The hours spent poring over site plans and traffic studies have produced the desired results.

The people reviewing proposed projects have to be able to envision the potential impacts in order to make accurate and appropriate decisions. Part II provides a summary of major types of impacts as well as sources for more information. The goal is to enable reviewers to obtain enough detailed information on the likely impacts of a proposed development to prevent unwanted consequences and mitigate through conditions and other techniques those impacts that can be reduced. Part III concludes with advice for maximizing the effectiveness of site plan and development review.

\* \* \* \*

A site plan is typically drawn by a professional land use planner, landscape architect, or civil engineer and depicts the general layout of a subdivision (the splitting of land into two or more lots) or a development project on a single tract of land, including the proposed lots, building footprints, road access, streets, sewer and water facilities, drainage, and lighting. Depending on the complexity of the project and the requirements of the review board, the site plan may be one page or more of drawings with detailed information on topography, soils, vegetation, and waterways.

We explain the information a site plan should contain and how to evaluate the likely outcomes of the proposed development. Developers should know what information they need to provide in order to receive approval for their development proposals. The general public, citizens' groups, and non-profit organizations should recognize a good or not-so-good development proposal as they offer comments on the proposal or as they attempt to intervene in support or opposition. A planner or planning commission reviewing a site plan proposal needs to have the right information in order to make a reasonable decision about whether to approve the development proposal unconditionally, to approve it with conditions, or to deny it.

The review of development is done by city, county, village, or township governments through professional planners, appointed planning commissions, zoning boards, design review boards, and in some cases, environmental commissions. In some states, such as Florida and Vermont, development review is done at the local level and also at the state level for large developments of regional impact. At the local government level, elected officials often make the legally binding decisions about whether to approve, modify and approve, or reject proposed subdivisions and development plans. But the elected officials rely on the advice and reviews conducted by the commissions and board to help make their decisions. The site plans are the principle documentation of the intended changes to the land used in making these decisions.

A newly appointed planning commission member quickly finds out that he or she has to anticipate a variety of impacts, ranging from water quality to archeological resources to educational services. Commission members must distill large amounts of information, much of it complex and technical, in a short amount of time and arrive at decisions on proposed development projects. Their decisions must meet appropriate legal and regulatory planning standards. A failure on the part of a planning commission or its staff to fully evaluate a site plan and anticipate environmental impacts can result in haphazard development, which causes awkward land use patterns and traffic congestion (too many curb cuts along major roads), pollutes water supplies (excessive stormwater runoff and soil erosion), and is ultimately costly to the community. In addition, site plan reviewers must keep in mind the potential impact of a development proposal on surrounding land uses.

In short, the review of subdivision proposals and land development plans involves careful thought, good judgment, communication skills, and a basic knowledge of planning. These reviews are a critical step for a community to move toward greater sustainability and a better quality of life.

> Robert M. Sanford University of Southern Maine



#### **PART I**

## An Overview of the Subdivision and Land Development Process



### THE REVIEW OF SUBDIVISION AND LAND DEVELOPMENT PLANS

Why and How

Landowners and developers, planning commission members, planners, non-profit groups, and the general public need to understand the land subdivision and land development process, and the changes it can bring to a community. Landowners and developers need to know what information to provide and in what sequence as they seek approval for their development proposals. A land development plan or site plan must contain specific information for reviewers to evaluate the likely outcomes of the proposed development. A planner or planning commission needs to have sufficient information from which to make a reasonable decision about whether to approve a development proposal unconditionally, to approve it with conditions, or to deny it. The general public, citizens groups, and non-profit organizations should know how to read development plans and understand the review process before offering comments in favor or against a proposed development project.

#### What Are Subdivision and Land Development?

Subdivision is the dividing of land into smaller pieces called *lots*. A subdivision can divide bare land into two or more lots for future sale and development. Or, a subdivision could involve dividing a parcel of land with buildings on it into lots with buildings. Or, a parcel with buildings could be subdivided into lots with buildings and lots without buildings. *Land development* is the construction of buildings on individual lots and providing infrastructure (especially streets, sewage disposal, and a water supply) for each lot. The subdivision and sale of several lots and the construction of new houses or commercial buildings can change a neighborhood's appearance, traffic patterns, school enrollments, sewer and water facilities, natural resources, property values, and property or sales tax base.

Subdivision and land development regulations describe the information that a landowner or developer must provide before the local government allows the division of land into lots, the sale of those lots for building sites, or construction to occur on those lots. The purposes of the subdivision and land development regulations are to provide adequate public facilities (sewer, water, roads, schools, and police and fire protection services) and to avoid harm to people, property, and the environment. These regulations provide a structured framework to make land use decisions.

The subdivision and land development regulations list standards for specific infrastructure that a landowner or developer must install before any lots can be sold or construction can begin. Subdivision and land development regulations should ensure that the developer properly places new buildings on lots, traffic flow is smooth, and the development is not located in a flood-prone area and has adequate sewer and water facilities, schools, and police and fire protection services.

#### Reasons to Have a Subdivision and Land Development Ordinance

There are several reasons why a city, county, village, or township should have a subdivision and land development ordinance. First, subdivision and land development regulations provide a legal process for registering land ownership and for selling property. For instance, when a large tract of land is divided into lots and sold, the number of landowners will increase. Registration of these new lots with the county recorder of deeds enables the seller of the lots to create a secure legal title for each lot buyer. Property lines, right-of-way easements, and streets must be accurately shown on a survey map called a *plat*. Each new lot also has a *metes and bounds legal description*, based on a professional survey, describing the dimensions and exact location of the lot (see Table 1.1). This way, the buyer of a lot knows the location, size, and dimensions of the lot as well as the infrastructure available.

Second, the review and approval of a subdivision by the planning commission and elected governing body assures buyers that their building lots meet the minimum standards for all new lots in the community. This means that there will be adequate space for houses or commercial buildings; the lots will not be flooded; the lots will have proper access to a road or street; and there is an easement or right-of-way passing through each lot to bring utilities such as electricity, natural gas, and telephone service.

Third, subdivision and land development regulations provide a consistent set of standards for all developments within the community. The planning commission reviews each subdivision and land development proposal in order to maximize traffic safety; avoid damaging stormwater runoff onto neighboring properties; or even to preserve open space sites with valuable trees, wetlands, or other natural features.

The regulations ensure that subdividers and land developers provide safe, efficient infrastructure to meet the needs of future residents and businesses. Typical infrastructure includes: streets, lights, sidewalks, gutters, water lines, sewers, drainage culverts, and water retention basins. Also, the subdivision regulations can require that new streets connect to streets in an adjoining existing development. Taxpayers can assume that their tax dollars will not be used to reconstruct roads that were not built to established standards. Developers can assume that all other developers in the jurisdiction must meet the same standards and pay similar fees to create lots for sale.

Fourth, subdivision regulations spell out who must pay for the necessary infrastructure. The regulations require the subdivider or land developer to install the infrastructure in a timely fashion or else post a

#### **TABLE 1.1** The contents of a subdivision ordinance

The subdivision and land development ordinance should contain the following elements, though your state enabling legislation may require more or less detail.

- · Authorizing statutes, citation, and jurisdiction
- · Statement of goals, priorities, and intent
- · Enforcement and compliance requirements
- · Definitions and terms used
- · Fees and payments, impact fees
- The preparation of plats and the subdivision process
- · Installing or paying for public improvements
- Floodplain and National Pollutant Discharge Elimination System permits
- · Lot splits, re-plats, and major and minor subdivisions
- · Conflicting rules—conditions, covenants, and restrictions
- · Dedications and reservations
- · Lot numbering and street naming
- · Site plan preparation and review

performance bond to ensure that adequate funds are available to install the infrastructure. These regulations place a major share of the financial burden of the infrastructure on the subdivider, land developer, and the purchasers of the new lots. In the past, many communities did not require the subdivider or land developer to install sidewalks and streets, or pay to extend sewer and water lines, and the local taxpayers had to pick up the entire cost of providing these public facilities.

Fifth, subdivision and land development regulations often require the subdivider to donate land or money for parks, school sites, and roads. These requirements are known as exactions and the donation of land is called a dedication. Cash payments required of the subdivider or land developer are called money in lieu of dedication or impact fees.

Sixth, a town subdivision and land development ordinance works together with the zoning ordinance and the community's comprehensive plan to promote orderly and efficient development. The zoning ordinance states the desired density of development in particular zones. The size of each lot in a proposed subdivision must be at least as large as the minimum size lot spelled out in the zoning ordinance for that zoning district. For example, if an R-1 single family residential zoning district requires lots of at least 5,000 square feet, all lots in the subdivision must be at least 5,000 square feet. In addition, the zoning ordinance designates maximum building bulk and lot coverage standards for buildings for each zoning district. For instance, a lot coverage standard might say that buildings can cover no more than 30% of a lot. Developers must meet these standards in the final subdivision design.

The subdivision and land development regulations help to put the comprehensive plan into action, and should support the goals and objectives of the comprehensive plan. For example, the creation of two-acre lots in an area zoned for conservation does not really support the goal of preserving open space and wildlife habitat. But dividing a two-acre parcel into eight quarter-acre lots in an R-1 single family residential zone would help achieve the goal of providing more single-family housing in the community.

#### The Origins of Subdivision Regulations

The subdivision process began in the 19th century, long before the practice of zoning emerged in America. As cities and towns grew, outlying landowners sold their properties for development to add to the city or town. The local government was expected to acquire the necessary land for streets and utility easements, and provide parks and public facilities. The developers surveyed, mapped, and filed these subdivisions with the county register of deeds, and sold the new lots. Then the developers departed for greener pastures, leaving the town with unpaved streets, substandard sewer projects, no sidewalks, and more than a few lots without access to a street except through an alley.

In 1928, the U.S. Department of Commerce published a Standard City Planning Enabling Act for states to pass in order to allow local governments to control the subdivision of land and approve the necessary infrastructure. A community could adopt subdivision and land development regulations by referring to the authority of its state enabling act. But few communities created consistent regulations for the subdivision of land. Instead, local governments began to approve a variety of subdivision policies, standards, and practices that fit local needs.

The single subdivision case that appears in most planning law books is Mansfield & Swett, Inc. v Town of West Orange in 1938 [120 N.J.L 145]. In this case, the New Jersey Supreme Court ruled that the subdivision process and development regulations are legitimate uses of government police power to protect the public health, safety, and welfare.

#### What to Include in the Subdivision and Land Development Ordinance

The planning commission is responsible for drafting and amending subdivision regulations and recommending them to the governing body, which gives final approval to the subdivision ordinance. A professional planner should write or help update the subdivision ordinance because of the technical and legal matters involved. Still, the planning commission and governing body should have input into the process and understand what the subdivision ordinance contains and how the subdivision process works.

The subdivision and land development ordinance must state that the sale of lots may proceed and a building permit be issued only after all requirements of the ordinance have been met. The ordinance also must emphasize that no public improvements (roads, sewer and water lines) may be installed until the preliminary plat is approved, and these public improvements cannot be used until the final plat is approved and recorded.

#### Authorizing Statutes, Citation, and Jurisdiction

It is important to tie the subdivision and land development regulations to state enabling statues and to specify where the regulations apply. Documentation should cite authorizing legislation and identify the agency or office that has jurisdictional authority. In addition to being a matter of good form and good communication, this provides a logical chain should compliance issues arise.

#### Statement of Goals, Priorities, and Intent

Explaining the purpose of the subdivision and land development regulations makes clear what the regulations are trying to accomplish. A proposed subdivision must conform to the goals and objectives of the community's comprehensive plan, the zoning ordinance, and zoning map. The purpose is to regulate and control the division and development of land within the community in order to:

- Promote public health, safety, and general welfare. 1.
- 2. Further the orderly layout and use of land.
- 3. Prevent the overcrowding of land.
- 4. Lessen congestion in the streets and highways.
- 5. Facilitate the adequate provision of water, sewerage, and other public facilities.
- Provide for proper ingress and egress.
- Promote proper "monumenting" of subdivided land and conveyance by accurate legal description.

#### **Definitions and Terms**

The subdivision and land development process has its own special terms, and the subdivision and land development ordinance should present a clear definition of these words.

Keep in mind that if the state enabling statutes define a word or process in a certain way, you should not define it differently. The glossary at the end of this book provides some brief definitions, but we need to start with some terms that are key to our consideration in the chapters ahead.

The definition of a subdivision is very important, and varies from state to state depending on the definition in the State Planning and Zoning Enabling Act. In Minnesota, for example, a subdivision is the division of a parcel into two or more lots. In Iowa a subdivision is the division of any parcel of land into three or more lots. Also, local governments usually define major and minor subdivisions. For instance, a minor subdivision might be the creation of up to four lots; a major subdivision then is more than four lots. A minor subdivision will involve a quicker review than a major subdivision.

#### Tales From the Trenches: The Profiler

I asked a well-known and highly successful development consultant to speak to a class in site planning and design. In my capacity as an environmental regulator I had reviewed many projects submitted by various developers who had hired this consultant, and I hoped he would share a few words on strategy with the students. We were interested to learn that his company carefully researched each board member or commissioner who would review his clients' projects. He prepared brief profiles of each reviewing official and would use them in crafting an overall strategy for steering a project through the permit process. The students were quite amazed. He told them it made sense when so much money and energy were invested in a project and that it was just good business. Many times in development review, the amateurs are reviewing the work of the professionals, and it is good to remember just how strategic the professionals really are.

The terms tract, lot, and parcel are often confusing. A tract is a piece of land under a single ownership. A parcel is also a piece of land under a single ownership, though usually smaller than a tract. A lot is a piece of land for a building site. The owner of a tract or parcel may divide the land into lots or parcels. For instance, a subdivider may subdivide a tract of 60 acres into two 20-acre parcels and four five-acre lots.

A plat is a map, prepared by a professionally licensed surveyor or engineer, which shows the surveyed location of all lots, blocks, roads, easements, and any covenants and restrictions in the deed. The plat is signed by all owners and responsible government officials, and recorded as the official description of the subdivided land.

Restricting the use of land through the subdivision process is an important process. The most common type of restriction is the easement. There are several types of easements, but a general definition is: granting a right to another person or persons for the limited use of your land. For example, a right-of-way easement allows a landowner to cross a neighbor's property along a driveway. A utility easement enables companies or local governments to extend power lines, phone lines, or sewer and water pipes across a property. The easement is surveyed and indicated on the plat, and will allow utility companies or a local government to install overhead or underground service lines or pipes. The lot owner may not block the utility easement or put a structure within the easement area. A drainage easement allows water runoff through more than one property, and no buildings may be placed in the drainage easement area. Another kind of easement is a conservation easement which restricts the use of land, usually to farming, forestry, or open space uses.

A second type of restriction is a *covenant* or *restrictive covenant*. A covenant is a legal agreement between the seller and the buyer of land. The government usually is not a party to the covenant but special circumstances do exist in a few states and for planned unit developments. Covenants may confer benefits or place burdens on the property. For example, a covenant may require the landowner to refrain from certain actions, such as blocking a scenic view; or a covenant may require the landowner to take certain actions, such as maintaining a fence between properties. Covenants are filed with the Register of Deeds at the same time a final plat is officially recorded. A notation of any covenants should appear on the plat to warn prospective buyers that covenants do exist.

Covenants are useful when people buy lots in a new subdivision. Covenants may specify several requirements that a landowner must observe when building a house or using the property. For instance, covenants may specify that driveways may only be placed at the corner of the lot, not the center. A covenant may require a homeowner to build only a pitched roof and restrict the roof to wood shingles. Covenants are commonly used by homeowners associations to ensure conformity in yard maintenance and house style among all landowners in the association.

There is no conflict between restrictive covenants and public regulations unless otherwise indicated by state law. Take, for example, a home occupation that is on a list permitted by the covenants, contracts, and restrictions (CCRs) of a homeowners association, but not spelled out as a permitted occupation in the

zoning ordinance. An applicant would not be entitled to this particular home occupation. The reverse in this situation is that the zoning administrator can issue a home occupation permit for a use listed under permitted uses even though it does not appear in the approved occupations list in the homeowners association's CCRs.

A third type of restriction is a *condition*. Most building sites are unique: some sites have heavy drainage flows, some are located in areas with difficult traffic patterns, and others have physical features that complicate building and site design. Subdivision regulations cannot address all situations. Conditions imposed upon the developer during the subdivision and land development review process can help to correct negative impacts that might occur when the property is developed. For instance, a large building lot proposed for multifamily development is located along a main road that already carries heavy traffic. Placing a stop sign on the main road may not be sufficient. As a condition of platting the subdivision, the planning commission could require the subdivider to open a secondary access road to another portion of the lot that would connect with a less heavily traveled road. The planning commission should impose conditions to avoid harm to future owners within the subdivision, to neighbors, and to the community at large. But first, the planning commission and governing body should adopt standards and guidelines for conditions.

Three important definitions for the subdivision and land development process include the sketch plan, preliminary plat, and final plat. A *sketch plan* is a concept plan, showing how the subdivider or land developer is proposing to subdivide the property or build on it.

The *preliminary plat* is the most important document in the subdivision and land development review process. The preliminary plat is prepared by a professional licensed surveyor. It includes the information provided in the sketch plan but in greater detail. All lots, streets, easements, and building lines appear in precise detail together with the topographic features of the land.

The *final plat* contains all changes to the preliminary plat, engineering and survey detail, and signature spaces for dedications of land and infrastructure, approval, and owner certification. The final plat is then ready for official approval by the planning commission and governing body. Next, the final plat is recorded with the County Recorder of Deeds. A digital copy should be held by the planning staff as well.

#### **Tales From the Trenches: The Difficult Committee**

Most towns fancy themselves somehow different—more difficult or picky or political—than all other towns. I don't want to start my client relationships by popping their bubble and asserting that people are really the same everywhere, so I smile and humor my clients, and begin by trying to understand what their individual concerns are, and also finding out who else in the town needs to be contacted. Usually by making sure that everyone is heard, and by going slowly to get consensus each step of the way, we arrive at design solutions that have broad support.

In one town a certain Library Planning Committee had truly been struggling with process, communications, and personal styles long before they hired their consultants. They were divided into almost angry factions, but through their own efforts they had stayed together and still all agreed that they wanted a beautiful and expanded library. I was very impressed with their determination to make the committee work. I learned from them that sometimes there has to be a very rigid set of rules about talking in group settings and about decision making. For example, they went around the table as many times as it took to be satisfied, but never allowed debate or "cross-talk" between two impassioned committee members. This defused their personal heat and kept everyone involved, even those who might prefer to "check out" when the going gets rough. I have used this equal-air-time technique in many group situations since being exposed to it with the Library Planning Committee of that town. And they do now have a beautiful library.

#### Fees and Payments, Impact Fees

Most local governments impose a fee on developers to cover the costs of the review of proposed subdivisions and land developments, including inspections and permits. This fee should be large enough to cover any special consultants that will be needed. Often, there is a base fee and additional per-lot fees.

An impact fee is a one-time payment for off-site infrastructure needs resulting from a new development (see also Chapter 11). For instance, a new development will increase the demand for park space. To pay for future park space, an impact fee can be charged on a per-dwelling-unit basis. Impact fees are allowed in most but not all states. Where allowed, the local government must clearly document the connection between a new development and the increased demand for certain public services, such as park land. The local government must set up a separate account for collecting and spending the impact fees on the desired services, such as park land. Some states allow the collection of impact fees for road improvements, schools, and other public needs generated by a proposed new development, while other states do not.

Incentives can be applied to fees (and taxes) by reducing, waiving, or phasing them into application. Incentives are a tool to manage growth through the site plan and development review process.

#### **Enforcement and Compliance Requirements**

Enforcement of subdivision and land development regulations is necessary to ensure that developers obey the regulations. The subdivision regulations must clearly state that land cannot be divided, conveyed, and recorded without government approval. Enforcement of the regulations can occur through warnings, stop work notices, citations, and court orders. A developer should expect to comply with the regulations through building permits, inspections, and certificates. Without the building permit, construction cannot legally proceed. A series of inspections is conducted by the local government's engineer to make sure that the installation of utilities, roads, and sidewalks meets the standards of the subdivision and land development regulations. In addition, the engineer may need to check on compliance with state and federal requirements, such as filling and dredging of wetlands, groundwater withdrawal, stream diversion, or sewage discharge into a waterway. The final land development stage involves the certificate of occupancy, indicating that the lot and buildings comply with the standards in the subdivision regulations; now the homes can be inhabited and employees can work in the commercial buildings.

#### The Subdivision Process

A registered land survey must be completed for any property proposed for subdivision. The developer must pay for the survey and must preserve all boundary markers. In addition, the developer may be required to preserve certain natural features, such as mature trees, if specified in the subdivision ordinance.

The developer must also present a title search from an attorney or title abstractor certifying the names of the owners of the property proposed for subdivision or development. Another title search should be required at the time of the filing of the final plat to confirm that the applicant owns the property in question, has the legal ability to subdivide, and is legally empowered to offer dedications of the land to the public. All too often joint or common owners, life estates, and corporate parties are not identified, rendering the subdivision process invalid.

Both the developer and the planning commission or planning staff must be organized and thorough to ensure that a development proposal is properly reviewed. Due diligence means that the developer has done a complete study of the proposed project, including the physical design and financing. For the planning commission or planning staff, due diligence involves a detailed checklist of questions about the property and proposed development project. Due diligence also demands that the planning commission or planning staff have checked the zoning of the property, taxes paid, and liens. The developer should be asked to respond to the checklist of questions to see if there are any omissions or oversights, particularly any necessary state or federal permits.