AN OPEN LETTER FROM THE PENNSYLVANIA PLANNING ASSOCIATION PROFESSIONAL DEVELOPMENT COMMITTEE

The following study notes are intended to help planners who are preparing to take the Comprehensive Planning Exam. These notes are based on *The Practice of Local Government Planning*, the *National AICP Exam Preparation Course*, the *Chapter Presidents Council Study Manual,* personal notes from graduate school, and several other sources. The notes briefly cover exam subjects such as planning case law, planning theory, planning processes, public participation techniques, urban design, housing, budgeting, office administration, growth management techniques, zoning, subdivision/land development ordinances, transportation planning, recreation planning, economic development, scheduling techniques, environmental issues, quantitative analysis techniques, and demographics.

These study notes are by no means a comprehensive or infallible guide to the Comprehensive Planning Exam's subject material. However, Lee Slusser (the Professional Development Officer) and the remainder of the Professional Development Committee of the Pennsylvania Planning Association would like to keep expanding and updating these notes on an annual basis. To that end, we sincerely welcome any and all suggestions for their improvement or expansion.

Finally, if you have any questions whatsoever about the Comprehensive Planning Exam, please feel free to contact Lee or any other member of the Professional Development Committee.

Sincerely,

Professional Development Committee
Pennsylvania Planning Association

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Bibliography of Source Material

This bibliography simply lists the source material utilized in the development of these study notes. As many of the topics considered herein are broad and can be approached in different ways there are no specific footnotes or end notes within the body itself. Indeed, much of the topic material relied on several sources and was recombined into what appears.

** This is not intended to serve as a recommended reading list. **

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Covington, William. "Wireless World." *AND* Kreines, Ted. "What the Wireless Revolution Means." *Planning*. December 1996

Dicken, Peter and Peter E. Lloyd. *Location in Space: Theoretical Perspectives in Economic Geography*, 3rd Ed. New York: Harper Collins Publishers, 1990.

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Klein, William R. "Visions of Things to Come." *Planning*. May 1993

Klosterman, Richard E. *Community Analysis and Planning Techniques*. Savage, MD: Rowman & Littlefield Publishers, 1990.

Knack, Ruth. "House-in-a-Box." *Planning*. August 1995: Pages 10-12.

Krizek, Kevin J., and Joe Power. *A Planners Guide to Sustainable Development* (Planning Advisory Service Report Number 467). The American Planning Association.

Mandelker, Daniel R., and Roger A. Cunningham. *Planning and Control of Land Development: Cases and Materials*. Charlottesville, VA: The Michie Company, 1990.

Marble, Duane F. and Donna J. Pequet. *Introductory Readings in Geographic Information Systems*. Philadelphia: Taylor and Francis, 1990.

Matthews, Olen Paul. *Water Resources: Geography and Law*. State College, PA: Association of American Geographers, 1984.

Meck, Stuart. "A Short History of Model Planning and Zoning Enabling Legislation." *PAS Memo*. February 1995

Morris, Marya. "Small Business Support Systems in San Diego." *Public Investment* (a "special edition" of the American Planning Association's *PAS Memo*). June 1997

Oberlander, H. Peter, and Eva Newbrun. "Catherine Bauer: Ahead of Her Time." *Planning*. May 1995: Pages 10-12.

Owen, Wilfred. *Transportation and World Development*. Baltimore: The Johns Hopkins University Press, 1987

Page, G. William. "Using Project Management Software in Planning." *Journal of the American Planning Association*. Autumn 1989

Petersen, John. E. and Dennis R. Strachota. *Local Government Finance: Concepts and Practices*. Chicago: Government Finance Officers Association, 1991.

Plous, F.K. Jr. "Refreshing ISTEA." *Planning.* February 1993

Russell, Joel S., and Andrew Meyers. "Planning Charrettes." *PAS Memo*. August 1995

Salvesen, David, and Douglas Porter. "The Not-So-Super Superfund." *Planning*. August 1993

Slusser, Lee C.: *AICP Exam Study Notes*. Altoona, PA: Pennsylvania Planning Association, 1990.

So, Frank S., and Irving Hand, eds. *The Practice of State and Regional Planning*. Washington DC: the International City/County Management Association, 1986.

So, Frank S., and Judith Getzels, eds. *The Practice of Local Government Planning*. Washington DC: the International City/County Management Association, 1988.

Study Manual for the Comprehensive AICP Exam of the American Institute of Certified Planners. Chapter Presidents Council, the American Planning Association, November 1999.

Triola, Mario F.: *Elementary Statistics*, 4th Ed. New York: The Benjamin/Cummings Publishing Company, Inc., 1989.

White, S. Mark, and Dawn Jourdan. "Neotraditional Development: A Legal Analysis." *Land Use Law*. August 1997: Pages 3-4.

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Zotti, Ed. "New Angles on Citizen Particiption." *Planning*. January 1991

Periodicals Consulted (in a general manner):

- Planning Magazine
- Journal of the American Planning Association
- Planning & Environmental Law
- Zoning News
- Planning Commissioner's Journal

Additional General Information Obtained from:

- US Department of Transportation
- US Department of Housing and Urban Development
- US Department of the Interior
- US Department of Energy
- US Department of Defense
- US Environmental Protection Agency

Planning Theory

Planning History

Timeline of American Planning History

Primary Source: http://www.planning.org/pathways/default.htm
Colored words identify general topics that can be further linked on the APA site. www.planning.org/pathways.

PREPARING FOR A PROFESSION

1682 William Penn lays out the City of Philadelphia in a grid pattern with five public squares to serve the populace in his “holy experiment” Planned Communities

1785 Ordinance of 1785. Provided for the rectangular land survey of the Old Northwest. The rectangular survey has been called "the largest single act of national planning in our history and ... the most significant in terms of continuing impact on the body politic" (Daniel Elazar). Landmark Laws Economic Development

1791 In his Report on Manufactures, Alexander Hamilton argues for protective tariffs for manufacturing industry as a means of promoting industrial development in the young republic. Economic Development Landmark Publication

1818 In a speech before Congress, Henry Clay proposes a plan (called the American System) to allocate federal funds to promote the development of the national economy by combining tariffs with internal improvements, such as roads, canals and other waterways. Economic Development

1825 Erie Canal completed. This artificial waterway connected the northeastern states with the newly settled areas of what was then the West, facilitating the economic development of both regions. Economic Development Regional Planning

1839 The National Road terminates in Vandalia, Illinois. Begun in 1811 in Cumberland, Maryland, it helps open the Ohio Valley to settlers. Economic Development

1855 First "model tenement" built in Manhattan. Housing

1862 Homestead Act opened the lands of the Public Domain to settlers for a nominal fee and five years residence. Landmark Laws Economic Development Housing

1862 Morrill Act. Congress authorizes land grants from the Public Domain to the states. Proceeds from the sale were to be used to found colleges offering instruction in agriculture, engineering, and other practical arts. Economic Development Landmark Laws

1864 New York Council of Hygiene of the Citizens Association mounts a campaign to raise housing and sanitary standards. Housing

1868 Frederick Law Olmsted and Calvert Vaux begin the planning of Riverside Illinois, a planned suburban community stressing rural as opposed to urban amenities. Planned Communities

1869 The Union Pacific and the Central Pacific railroads meet at Promontory Point, Utah, on May 10 to complete the first transcontinental railroad. Economic Development

1878 John Wesley Powell's *Report on the Lands of the Arid Region of the United States* is published. Includes a proposed regional plan that would both foster settlement of the arid west and conserve scarce water resources. Conservation & Environment Regional Planning Economic Development Landmark Laws Landmark Publication

1879 *Progress and Poverty* published. In this influential book Henry George presents an argument for diminishing extremes of national wealth and poverty by means of a

single tax (on land) that would capture the "unearned increment" of national development for public uses. Landmark Publication

1879 Debut of the "Dumbbell Tenement," so called because of its shape. A form of multifamily housing widely built in New York until the end of the century and notorious for the poor living conditions it imposed on its denizens (lack of light, air, space). Housing

1879 Establishment of U.S. Geological Survey to survey and classify all Public Domain lands. Economic Development Conservation & Environment

1880-84 Building of Pullman, Illinois, model industrial town by George Pullman. Planned Communities

1887 In the case *Mugler v. Kansas* the US Supreme Court ruled that the courts have the duty to strike down local laws that do not have a real or substantial relation to the police power: to protect the health, safety, welfare, and morals of the community. Landmark Laws

1890 *How the Other Half Lives,* by Jacob Riis, is published; a powerful stimulus to housing and neighborhood reform. Landmark Publication Housing

1891 General Land Law Revision Act gave President power to create forest preserves by proclamation. Conservation & Environment Landmark Laws

1892 Sierra Club founded to promote the protection and preservation of the natural environment. John Muir, Scottish-American naturalist, and a major figure in the history of American environmentalism, was the leading founder. Conservation & Environment

1893 World's Columbian Exposition in Chicago commemorating the 400th anniversary of the discovery of the New World. A source of the City Beautiful Movement and of the urban planning profession. History of Planning Profession

1896 United States v. Gettysburg Electric Railway Co. The first significant legal case concerning historic preservation. The U.S. Supreme Court rules that the acquisition of the national battlefield at Gettysburg served a valid public purpose. Conservation & Environment Landmark Laws

1897 Forest Management Act. Authorized some control by the Secretary of the Interior over the use and occupancy of the forest preserves. Conservation & Environment Landmark Laws

1898 *Tomorrow: A Peaceful Path to Real Reform,* by Ebenezer Howard, a source of the Garden City Movement. Reissued in 1902 as *Garden Cities of Tomorrow*. Landmark Publication Planned Communities

1898 Gifford Pinchot becomes Chief Forester of the United States in the Department of Agriculture. From this position he publicizes the cause of forest conservation. Conservation & Environment

FOUNDATIONS FOR A PROFESSION

1901 New York State Tenement House Law. The legislative basis for the revision of city codes that outlawed tenements such as the "Dumbbell Tenement." Lawrence Veiller was the leading reformer. Housing Landmark Laws

1902 U.S. Reclamation Act. Created fund from sale of public land in the arid states to supply water there through the construction of water storage and irrigation works. Conservation & Environment Landmark Laws Economic Development

1903 Letchworth constructed. First English Garden City and a stimulus to New Town movement in America (Greenbelt Towns, Columbia, etc.). Planned Communities

1903 President Theodore Roosevelt appoints a Public Lands Commission to propose rules for orderly land development and management. Conservation & Environment Landmark Laws

1906 Antiquities Act of 1906: First law to institute federal protection for preserving archaeological sites. Provided for designation as National Monuments areas already in the public domain that contained "historic landmarks, historic and prehistoric structures, and objects of historic or scientific interest." Conservation & Environment Landmark Laws

1907 Founding of New York Committee on the Congestion of Population. Fostered movement, led by its secretary, Benjamin Marsh, to decentralize New York's dense population. Housing

1907 President Roosevelt establishes an Inland Waterway Commission to encourage multipurpose planning in waterway development: navigation, power, irrigation, flood control, water supply. Conservation & Environment Landmark Laws

1908 White House Conservation Conference. State governors, federal officials, and leading scientists assemble to deliberate about the conservation of natural resources. Conservation & Environment

1909 First National Conference on City Planning in Washington, D.C. History of Planning Profession

1909 Daniel Burnham's Plan of Chicago published. First metropolitan plan in the United States. (Key figures: Frederick A. Delano, Charles Wacker, Charles Dyer Norton.) Regional Planning

1909 Possibly the first course in city planning in this country is inaugurated in Harvard College's Landscape Architecture Department. Taught by James Sturgis Pray. History of Planning Profession

1909 The US Supreme Court upholds municipal regulation of building heights in the case *Welch v. Swasey*. This validated the use of construction standards to uphold public safety. Landmark Laws

1911 Frederick Winslow Taylor publishes *The Principles of Scientific Management,* fountainhead of the efficiency movements in this country, including efficiency in city government. Landmark Publication

1912 Walter D. Moody's "Wacker's Manual of the Plan of Chicago" is adopted as an eigth-grade textbook on City Planning by the Chicago Board of Education. Possibly the first formal instruction in city planning below the college level. Landmark Publication History of Planning Profession

1913 A chair in Civic Design, first of its kind in the U.S., is created in the University of Illinois's Department of Horticulture for Charles Mulford Robinson, one of the principal promoters of the World's Columbian Exposition. History of Planning Profession

1914 Flavel Shurtleff writes *Carrying Out the City Plan,* the first major textbook on city planning. Landmark Publication History of Planning Profession

1914 Panama Canal completed and opened to world commerce. Economic Development

1914 Harland Bartholomew, eventually the country's best known planning consultant, becomes the first full-time employee in Newark, New Jersey, of a city planning commission. History of Planning Profession

1915 In *Hadacheck v. Sebastian*, the US Supreme Court upheld a municipal regulation that governed the placement of land uses. Landmark Laws

1915 Patrick Geddes, "Father of Regional Planning" and mentor of Lewis Mumford, publishes *Cities in Evolution.* Landmark Publication Regional Planning

1916 Nelson P. Lewis published *Planning of the Modern City*. Landmark Publication History of Planning Profession

1916 Nation's first comprehensive zoning resolution adopted by New York City Board of Estimates under the leadership of George McAneny and Edward Bassett, known as the "Father of Zoning." Housing Landmark Laws

1916 National Park Service established with sole responsibility for conserving and preserving resources of special value. Conservation & Environment Landmark Laws

1917 Frederick Law Olmsted, Jr. becomes first president of newly founded American City Planning Institute, forerunner of American Institute of Planners and American Institute of Certified Planners. History of Planning Profession

1918 U.S. Housing Corporation and Emergency Fleet Corporation established. Influenced later endeavors in public housing. Operated at major shipping centers to provide housing for World War I workers. Housing Landmark Laws

1919 Three early unifunctional regional authorities--the Metropolitan Sewerage Commission, the Metropolitan Water Board and the Metropolitan Park Commission--combined to form the Boston Metropolitan District Commission. Regional Planning

1921 New Orleans designates the Vieux Carre Commission, the first historic preservation commission in the U.S. Conservation & Environment

1922 Los Angeles County Regional Planning Commission created. First of its kind in the United States. (Hugh Pomeroy, head of staff.) History of Planning Profession Regional Planning

1922 Inauguration of Regional Plan of New York under Thomas Adams. Regional Planning

1923 Ground broken for construction of Mariemont, Ohio, in suburban Cincinnati. Mary Emery was its founder and benefactor; John Nolen, the planner. Some of its features (short blocks, mixture of rental and owner-occupied housing) foreshadow the contemporary New Urbanism movement. Planned Communities

1922 Pennsylvania Coal Co. v. Mahon. The first decision to hold that a land use restriction constituted a taking. The U.S. Supreme Court (Justice Brandeis dissenting) noted "property may be regulated to a certain extent, [but] if regulation goes too far it will be recognized as a taking," thus acknowledging the principle of a "regulatory taking." Landmark Laws

1924 U.S. Department of Commerce under Secretary Herbert Hoover issues a Standard State Zoning Enabling Act. Landmark Laws

1924-28 Sunnyside Gardens, a planned neighborhood designed by Clarence Stein and Henry Wright, is built by City Housing Corporation under Alexander Bing in Queens, New York. Planned Communities

1925 Publication of "Regional Plan" issue of *Survey Graphic,* influential essays on regional planning by Lewis Mumford and other members of the Regional Planning Association of America (e.g., Catherine Bauer). Landmark Publication Regional Planning

1925 Cincinnati, Ohio, becomes first major American city officially to endorse a comprehensive plan. (Alfred Bettman, Ladislas Segoe). History of Planning Profession

1925 Ernest Burgess's "Concentric Zone" model of urban structure and land use is published. Landmark Publication

1925 In April, The American City Planning Institute and The National Conference on City Planning publish Vol. 1, No. 1 of *City Planning*, ancestor of present-day *Journal of the American Planning Association*. Landmark Publication History of Planning Profession

1926 *Village of Euclid v. Ambler Realty.* Constitutionality of zoning upheld by the U.S. Supreme Court. (Case argued by Alfred Bettman.) Landmark Laws

1928 U.S. Department of Commerce under Secretary Herbert Hoover issues a Standard City Planning Enabling Act. Landmark Laws History of Planning Profession

1928 Robert Murray Haig's monograph "Major Economic Factors in Metropolitan Growth and Arrangement" is published in Volume I of *The Regional Survey of New York and Its Environs.* Viewed land use as a function of accessibility. Landmark Publication Regional Planning

1928 In *Nectow v. City of Cambridge*, the US Supreme Court struck down as unconstitutional a local zoning ordinance that was not reasonably tied to a valid public purpose under the police power. Landmark Laws

1928 Construction of Radburn, New Jersey, begun. Planned community inspired by Howard's Garden City concept and designed by Stein and Wright. A forerunner of the New Deal's Greenbelt towns. Planned Communities

1929 Clarence Perry's monograph on the Neighborhood Unit is published in Volume VII of *The Regional Survey of New York and Its Environs.* Landmark Publication Planned Communities

1929 Wisconsin law, first instance of rural zoning, authorized county boards "to regulate, restrict and determine the areas within which agriculture, forestry and recreation may be conducted." Landmark Laws

1929 Stock market crash in October ushers in Great Depression and fosters ideas of public planning on a national scale. Economic Development

BUILDING A PROFESSION

1931 National Land Utilization Conference convened in Chicago. Three hundred agricultural experts deliberate on rural recovery programs and natural resource conservation. Conservation & Environment

1932 Federal Home Loan Bank System established to shore up shaky home financing institutions. Housing

1932 In *Bove v. Donner-Hanna Coke Corp*, the court ruled that an owner cannot make use of his property if it creates a material annoyance to his neighbor or if his neighbor's property or life is materially lessened by the use. Landmark Laws

1932 Reconstruction Finance Corporation established at the outset of the Great Depression to revive economic activity by extending financial aid to failing financial, industrial, and agricultural institutions. Economic Development

1933 FDR inaugurated. New Deal begins with a spate of counter-depression measures.

1933 Home Owners Loan Corporation established to save homeowners facing loss through foreclosure. Housing

1933 The National Planning Board established in the Interior Department to assist in the preparation of a comprehensive plan for public works under the direction of Frederick Delano, Charles Merriam, Wesley Mitchell. Its last successor agency, the National Resources Planning Board, was abolished in 1943. Conservation & Environment History of Planning Profession

1933 Civilian Conservation Corps established to provide work for unemployed youth and to conserve nation's natural resources. Conservation & Environment

1933 Federal Emergency Relief Administration set up under Harry Hopkins to organize relief work in urban and rural areas. Landmark Laws

1933 Tennessee Valley Authority created to provide for unified and multipurpose rehabilitation and redevelopment of the Tennessee Valley, America's most famous experiment in river-basin planning. Senator George Norris of Nebraska fathered idea, and David Lilienthal was its most effective implementer. Conservation & Environment Regional Planning Landmark Laws Economic Development

1933 The Agricultural Adjustment Act is passed to regulate agricultural trade practices, production, prices, supply areas (and therefore land use) as a recovery measure.

1934 American Society of Planning Officials founded, an organization for planners, planning commissioners and planning-related public officials. History of Planning Profession

1934 National Housing Act. Established FSLIC for insuring savings deposits and the FHA for insuring individual home mortgages. Housing Landmark Laws

1934 Taylor Grazing Act is passed, its purpose to regulate the use of the range in the West for conservation purposes. Conservation & Environment Regional Planning Landmark Laws

1934 "Final Report" by the National Planning Board on its first year of existence. Includes a section entitled "A Plan for Planning" and an account of the "Historical Development of Planning in the United States." The latter views American planning history in the context of U.S. political and economic history. Landmark Publication

1935 Resettlement Administration established under Rexford Tugwell, Roosevelt "braintruster," to carry out experiments in land reform and population resettlement. This agency built the three Greenbelt towns (Greenbelt, Maryland; Greendale, Wisconsin; Greenhills, Ohio) forerunners of present day New Towns: Columbia, Maryland; Reston, Virginia; etc.) Planned Communities Landmark Laws

1935 Publication date of *Regional Factors in National Planning* by the National Resources Committee, a landmark in regional planning literature. Landmark Publication Conservation & Environment Regional Planning

1935 Soil Conservation Act. Congress moves to make prevention of soil erosion a national responsibility. Conservation & Environment Landmark Laws

1935 The Historic Sites, Buildings and Antiquities Act, a predecessor of the National Historic Preservation Act, passed. Requires the Secretary of the Interior to identify, acquire, and restore qualifying historic sites and properties and calls upon federal agencies to consider preservation needs in their programs and plans. Conservation & Environment Landmark Laws

1935 Social Security Act passed to create a safety net for elderly. Frances Perkins, Secretary of Labor and first woman cabinet member, was a principal promoter. Landmark Laws

1935 Congress authorizes construction of the Grande Coulee Dam in Central Washington State. Finished in 1941, it is the largest concrete structure in the U.S. and the heart of the Columbia Basin Project, a regional plan comparable in its scope to TVA. The project's purposes are irrigation, electric power generation and flood control in the Pacific Northwest. Economic Development Regional Planning

1936 Hoover Dam on the Colorado River completed. Creates and sustains population growth and industrial development in Nevada, California, and Arizona. Economic Development Regional Planning

1937 *Our Cities: Their Role in the National Economy.* A landmark report by the Urbanism Committee of the National Resources Committee. (Ladislas Segoe headed research staff.) Landmark Publication History of Planning Profession

1937 U.S. Housing Act (Wagner-Steagall). Set the stage for future government aid by appropriating $500 million in loans for low-cost housing. Tied slum clearance to public housing. Housing Landmark Laws

1937 Farm Security Administration established, successor to the Resettlement Administration and administrator of many programs to aid the rural poor. Landmark Laws

1938 The American Institute of Planners, the planning field's professional organization, states as its purpose: "... the planning of the unified developoment of urban communities and their environs, and of states, regions and the nation, as expressed through determination of the comprehensive arrangement of land uses and land occupancy and the regulation thereof." History of Planning Profession

1939 Homer Hoyt's influential "sector theory" of urban growth appears in his monograph, *The Structure and Growth of Residential Neighborhoods in American Cities.* Landmark Publication Housing

1941 *Local Planning Administration,* by Ladislas Segoe, first of "Green Book" series, appears. Landmark Publication History of Planning Profession

1941 Robert Walker's *Planning Function in Urban Government* published. Landmark Publication History of Planning Profession

1944 Bretton Woods (New Hampshire) Agreement. The U.S. and allies meet to establish the International Bank for Reconstruction and Development (World Bank). Economic Development

1944 Serviceman's Readjustment Act ("G.I. Bill"). Guaranteed loans for homes to veterans under favorable terms, thereby accelerating the growth of suburbs. Housing Landmark Laws

1947 Housing and Home Financing Agency (predecessor of HUD) created to coordinate federal government's various housing programs. Housing Landmark Laws

1947 Construction of Park Forest, Illinois, and Levittown, New York, begun. Planned Communities

1947 Secretary George C. Marshall uses his Harvard College commencement address to propose the Marshall Plan for the reconstruction of postwar Europe. Economic Development Regional Planning

1949 Housing Act (Wagner-Ellender-Taft Bill). First U.S. comprehensive housing legislation. Aimed to construct about 800,000 units. Inaugurated urban redevelopment program. Housing Landmark Laws

1949 The National Trust for Historic Preservation is created and chartered by Congress. Conservation & Environment

1954 In *Berman v. Parker,* U.S. Supreme Court upholds right of Washington, D.C. Redevelopment Land Agency to condemn properties that are unsightly, though non-deteriorated, if required to achieve objectives of duly established area redevelopment plan. Landmark Laws Conservation & Environment

1954 In *Brown v. Board of Education* (Topeka, Kansas), Supreme Court upholds school integration. Landmark Laws

1954 Housing Act of 1954. Stressed slum prevention and urban renewal rather than slum clearance and urban redevelopment as in the 1949 act. Also stimulated general planning for cities under 25,000 population by providing funds under Section 701 of the act. "701 funding" later extended by legislative amendments to foster statewide, interstate, and substate regional planning. History of Planning Profession Regional Planning Landmark Laws

1954 The Council of Government movement (COGS) begins in the Detroit area with the formation of a Supervisors' Inter-County Committee composed of the representatives of each county in southeastern Michigan for the purpose of confronting areawide problems. It soon spreads nationwide. Regional Planning

1956 Congress passes multibillion dollar Federal Aid Highway Act to create interstate highway system linking all state capitals and most cities of 50,000 population or more. Landmark Laws Economic Development

1957 F. Stuart Chapin publishes *Urban Land Use Planning*. Landmark Publication

1957 *Education for Planning*. A seminal, book-length inquiry by Harvey S. Perloff into the "appropriate intellectual, practical and 'philosophical' basis for the education of city and regional planners ..." History of Planning Profession

1959 A "Multiple Land Use Classification System" (A. Guttenberg) published in *Journal of American Institute of Planners.* The first approach to the definition of land-use classifications in multidimensional terms. Landmark Publication

1959 Congress establishes the Advisory Commission on Intergovernmental Relations (ACIR), with members from various branches of government. Serves primarily as a research agency and think tank in area of intergovernmental relations. Landmark Laws Regional Planning

1959 The American Collegiate Schools of Planning (ASCP) is born when a few department heads of planning schools get together at the annual ASIP conference to confer on common problems and interests regarding the eductation of planners. History of Planning Profession

1959 The St. Lawrence Seaway is completed. This joint U.S.-Canada project created, in effect, a fourth North American seacoast, opening the American heartland to sea-going vessels. Economic Development Regional Planning

1960 *Image of the City* by Kevin Lynch defines basic elements of city's "imageability" (paths, edges, nodes, etc.). Landmark Publication

1961 *The Death and Life of Great American Cities,* by Jane Jacobs, includes a critique of planning and planners. Landmark Publication History of Planning Profession

1961 Richard Hedman and Fred Bair publish *And On the Eighth Day*, a hilarious book of cartoons poking fun at the planning profession by two of our own. Landmark Publication History of Planning Profession

1961 Hawaii becomes first state to institute statewide zoning. Landmark Laws

1961 A Delaware River Basin Commission representing the states of New York, New Jersey and Pennsylvania is created to foster joint management of the river's water resources. Regional Planning

1962 The urban growth simulation model emerges in the Penn-Jersey Transportation Study. Regional Planning

1962 "A Choice Theory of Planning," seminal article in *AIP Journal* by Paul Davidoff and Thomas Reiner, lays basis for advocacy planning concept. Landmark Publication

1962 Rachel Carson's book, *Silent Spring* is published and wakes the nation to the deleterious effects of pesticides on animal, plant and human life. Landmark Publication Conservation & Environment

1962 The Fairfax County Board of Supervisors establishes Virginia's first residential planned community zone, clearing the way for the creation of Reston, a full-scale, self-contained New Town 18 miles from Washington, D.C. Planned Communities

1963 Columbia, Maryland, a new town situated about halfway between Washington and Baltimore, featuring some class integration and the neighborhood principle. Planned Communities

1964 T.J. Kent publishes *The Urban General Plan.* Landmark Publication History of Planning Profession

1964 Civil Rights Act outlaws discrimination based on race, creed, and national origin in places of public accommodation. Landmark Laws

1964 *The Federal Bulldozer* by Martin Anderson indicts then-current urban renewal program as counterproductive to its professed aims of increased low- and middle-income housing supply. With Herbert Gans's *The Urban Villagers* (1962), a study of the consequences for community life in a Boston West End Italian-American community, contributes to a change in urban policy. Landmark Publication Housing

1964 In a commencement speech at the University of Michigan, President Lyndon Johnson declares war on poverty and urges congressional authorization of many remedial programs, plus the establishment of a cabinet-level Department of Housing and Community Development. Economic Development

1965 A White House Conference on Natural Beauty in America is convened on May 24 and 25, owing much to the interest and advocacy of the First Lady, Lady Bird Johnson. Conservation & Environment

1965 Housing and urban policy achieve cabinet status when the Housing and Home Finance Agency is succeeded by the Department of Housing and Urban Development. Robert Weaver becomes HUD's first Secretary and nation's first African-American cabinet member. Housing Landmark Laws

1965 Congress passes the Water Resources Management Act authorizing Federal-Multistate river basin commissions. Landmark Laws Regional Planning

1965 The Public Work and Economic Development Act passes Congress. This act establishes the Economic Development Administration to extend coordinated, multifaceted aid to lagging regions and foster their redevelopment Economic Development Landmark Laws Regional Planning

1965 The Appalachian Regional Planning Act establishes a region comprising all of West Virginia and parts of 12 other states, plus a planning commission with the power to frame plans and allocate resources. Economic Development Landmark Laws Regional Planning

1965 John Reps publishes *The Making of Urban America*, the first comprehensive history of American urban planning beginning with colonial times. Landmark Publication

1966 The Demonstration Cities and Metropolitan Development Act launched the "model cities" program, an interdisciplinary attack on urban blight and poverty. A centerpiece of President Lyndon Johnson's "Great Society" program. Housing Landmark Laws

1966 *With Heritage So Rich*, a seminal historic preservation book, is published. Conservation & Environment Landmark Publication

1966 National Historic Preservation Act passed. Establishes the National Register of Historic Places and provides, through its Section 106, for the protection of preservation-worthy sites and properties threatened by federal activities. This act also creates the national Advisory Council on Historic Preservation and directs that each state appoint a State Historic Preservation Officer (SHPO). Conservation & Environment Landmark Laws

1966 Section 4(f) of the Department of Transportation Act provides protection to parkland, wildlife refuges, and other preservation-worthy resources in building national roads. Unlike parkland and wildlife refuges, however, privately owned historic sites as well as those in public ownership are protected by Section 4(f). Conservation & Environment Landmark Laws

1967 The planning profession reaches its 50th anniversary with a celebratory conference in Washington, D.C. Many of the earliest practitioners and founders of the profession attend together with eminent leaders of other professions. History of Planning Profession

1967 The "(Louis B.) Wetmore Amendment" drops the final phrase in the 1938 AIP declaration of purpose which tied it to the comprehensive arrangement and regulation of land use. The effect is to broaden the scope and membership of the profession by including "social planners" as well as "physical planners." History of Planning Profession

1968 To implement Intergovernmental Relations Act of 1968 the Office of Management and Budget issues Circular A-95 requiring state and substate regional clearinghouses to review and comment on federally assisted projects to facilitate coordination among the three levels of government. Landmark Laws Regional Planning

1968 The 8th Circuit rules in *Jones v. Mayer* that racial barriers cannot affect the acquisition of property. Landmark Laws

1969 Ian McHarg publishes *Design with Nature,* tying planning to the natural environment. Landmark Publication

1969 National Environmental Policy Act requires an "environmental impact statement" for every federal or federally aided state or local major action that might significantly harm the environment. Conservation & Environment Landmark Laws

1969 Mel Scott publishes *American City Planning Since 1890*. Reissued in 1995 by the American Planning Association. Landmark Publication History of Planning Profession

1970 First "Earth Day," January 1. Conservation & Environment

1970 Federal Environment Protection Agency established to administer main provisions of the Clean Air Act (1970). Conservation & Environment Landmark Laws Regional Planning

1970 The Miami Valley (Ohio) Regional Planning Commission Housing Plan is adopted, the first such plan in the nation to allocate low- and moderate-income housing on a "fair share" basis. Housing Regional Planning

1971 AIP adopts a Code of Ethics for professional planners. History of Planning Profession

1971 In *James v. Valtierra*, the US Supreme Court upheld an amendment to the California Constitution mandating a referendum on all housing projects because an intent to racially discriminate could not be found. Landmark Laws

1971 The US Supreme Court, in *Calvert Cliffs Coordinating Committee v. US Atomic Energy Commission*, found that an approval for a nuclear power plant was not properly granted because the requirements of the National Environmental Protection

Act were not followed. This decision solidified the place of NEPA in the development arena. Landmark Laws

1972 Coastal Zone Management Act adopted. Conservation & Environment Regional Planning Landmark Laws

1972 General revenue sharing inaugurated under the U.S. State and Local Fiscal Assistance Act. Landmark Laws

1972 In *Golden v. Planning Board of Ramapo*, New York high court allows the use of performance criteria as a means of slowing community growth. Landmark Laws

1972 Demolition of St. Louis's notorious Pruitt-Igoe Project symbolizes a nationwide move away from massive, isolating, high-rise structures to a more humane form of public housing architecture: low-rise, less isolated, dispersed. Housing

1973 Endangered Species Act. Authorized Federal assistance to state and local jurisdictions to establish conservation programs for endangers plant and animal species. Conservation & Environment Landmark Laws

1973 The Oregon Supreme Court rules in *Fasano v. Board of County Commissioners of Washington County* that all zoning and rezoning must be consistent with applicable comprehensive plans. Landmark Laws

1974 The Housing and Community Development Act replaces the categorical grant with the block grant as the principal form of federal aid for local community development. Landmark Laws

1974 The US Supreme Court rules in *Village of Belle Terre v. Boraas* that limiting residents of housing units to related individuals was a legitimate use of the police power, eliminating many fundamental civil rights challenges to local regulations. Landmark Laws Housing

1975 The US 4th Circuit finds that quotas on the annual number of building permits issued was a constitutional use of the police power in *Sonoma v. Petaluma*. Landmark Laws

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1976 The California Supreme Court, in *Associated Home Builders of Greater East Bay v. City of Livermore*, found that temporary moratoria on building permit issuance was constitutional. Landmark Laws

1976 Historic Preservation Fund established. Conservation & Environment

1977 In another equal protection case, the US Supreme Court finds in *Village of Arlington Heights v. Metropolitan Housing Development Corp*. that a regulation effectively denying housing to people based on race, immigration status, or national origin was unconstitutional. Further a regulation effectively denying housing to people based on gender or illegitimacy must substantially advance a legitimate state interest and be passed or enforced with intent to discriminate. Landmark Laws Housing

1977 First exam for AIP membership conducted. History of Planning Profession

1978 *Penn Central Transportation Co. v. City of New York,* 438 U.S. 104 (1978): U.S. Supreme Court upholds New York City's Landmark Preservation Law as applied to Grand Central Terminal. In this landmark decision, the Court found that barring some development of air rights was not a taking when the interior of the property could be put to lucrative use. Landmark Laws

1978 American Institute of Planners (AIP) and American Society of Planning Officials (ASPO) merge to become American Planning Association (APA). History of Planning Profession

REFINING THE PROFESSION

1980 "Reagan Revolution" begins. Planning profession challenged to adapt to a new (counter-New Deal) policy environment: reduced federal domestic spending, privatization, deregulation, etc. Phase-out of some earlier aids to planning (e.g., sewer grants) and planning programs (e.g., "Title V Regions"). History of Planning Profession

1980 The US Supreme Court finds in *Central Hudson v. Public Service Commission* that for a regulation involving first amendment rights to survive, it must 1) advance a compelling state interest, 2) allow a reasonable alternative means of communication, 3) is as narrowly defined as possible, and 4) is a reasonable time, place, and manner restriction. Landmark Laws

1980 Superfund Bill passed by Congress (Comprehensive Response, Compensation and Liability Act). Creates liability for persons discharging hazardous waste into the environment. Taxes polluting industries to establish a trust fund for the cleanup of polluted sites in cases where individual responsibility is not ascertainable. Conservation & Environment Landmark Laws

1980 The case *Agins v. City of Tiburon* makes clear that a regulation that is not reasonably related to the police power and causes a property to lose all economic value constitutes a taking. Landmark Laws

1980 The Associated Collegiate Schools of Planning (ACSP) is established to represent the academic branch of the planning profession. History of Planning Profession

1981 In *Metromedia v. City of San Diego*, the US Supreme Court holds that neither commercial nor non-commercial speech can be favored over the other. The ordinance was overturned because it effectively banned non-commercial signs. Landmark Laws

1981 ACSP issues Volume 1, Number 1 of *The Journal of Education and Planning Research*. Landmark Publication History of Planning Profession

1982 The US Supreme Court confirms in *Loretto v. Teleprompter Manhattan CATV Corp.* that a physical invasion of a property is a taking. Landmark Laws

1983 In a second case focusing on Mt. Laurel, New Jersey, the New Jersey Supreme Court rules that all 567 municipalities in the state must build their "fair share" of affordable housing. A precedent-setting blow against racial segregation. Landmark Laws Housing Regional Planning

1984 In *Members of City Council v. Taxpayers for Vincent*, the US Supreme Court upheld a regulation that prohibited the attaching of signs to utility poles. The Court found that the regulation met all the tests mentioned under Central Hudson, above (1980). Landmark Laws

1984 Construction begins on Seaside, Florida, one of the earliest examples of the New Urbanism. (Andres Duany and Elizabeth Plater-Zyberk). Unlike most earlier planned communities, the New Urbanism emphasizes urban features -- compactness, walkability, mixed use -- and promotes a nostalgic architectural style reminiscent of the traditional urban neighborhood. The movement has links to the anti-sprawl, smart growth movement. Planned Communities

1985 The US Supreme Court, in *City of Cleburne v. Cleburne Living Center* ruled that an ordinance that does treat different groups unequally, but does not involve a fundamental right or group that gained protection under *Village of Arlington Heights* (1977) merely needs to pass a rational basis test. (In this case, the ordinance failed the rational basis test.) Landmark Laws

1986 In *City of Renton v. Playtime Theaters, Inc.*, the US Supreme Court allowed a zoning ordinance limiting sexually-oriented businesses to 5% of the municipal land area to stand based on a study conducted on the negative effects the business type has on surrounding areas. Landmark Laws

1986 The First National Conference on American Planning History is convened in Columbus, Ohio and leads to the founding of the Society 0f American City and Regional Planning History (SACRPH) the following year. History of Planning Profession

1987 In *First English Evangelical Lutheran Church v. County of Los Angeles,* U.S. Supreme Court finds that even a temporary taking requires compensation. In *Nollan v. California Coastal Commission,* it finds that land-use restrictions, to be valid, must be tied directly to a specific public purpose. Landmark Laws

1989 The Planning Accreditation Board (PAB) is recognized by the Washington-based Council on Post Secondary Education to be the sole accrediting agency in the field of professional planning education. History of Planning Profession

1990 The US Supreme Court considered the relationship of regulation and religion in two cases. In *Cohen v. Des Planes*, the Court ruled that zoning cannot be used to grant religious institutions advantages over other commercial ventures. In this case, the Court overturned a zoning provision that allowed a church to run a day care in a residential zone where no one else could do so. In the second case, *Oregon v. Smith*, the Court ruled that zoning that is neutral on its face was permissible so long as it doesn't hinder the religion itself. This particular case upheld a ban on the use of peyote in Native American religious services. Landmark Laws

1991 Passage of Intermodal Surface Transportation Efficiency Act (ISTEA) includes provisions for a National Scenic Byways Program and for transportation enhancements, each of which includes a historic preservation component. Conservation & Environment Landmark Laws

1992 In *Lucas v. South Carolina Coastal Council*, the U.S. Supreme Court limits local and state governments' ability to restrict private property without compensation. Landmark Laws

1993 Enterprise Zone/Empowerment Community (EZ/EC) proposal signed into law. Aims tax incentives, wage tax credits, special deductions, and low-interest financing to a limited number of impoverished urban and rural communities to jumpstart their economic and social recovery. Economic Development

1994 In *Dolan v. City of Tigard,* the U.S. Supreme Court rules that a jurisdiction must show that there is a "rough proportionality " between the adverse impacts of a

proposed development and the exactions it wishes to impose on the developer. Landmark Laws

1994 North American Free Trade Agreement (NAFTA) among U.S., Canada and Mexico begins on January 1, its purpose to foster trade and investment among the three nations by removing or lowering non-tariff as well as tariff barriers. Economic Development Landmark Laws Regional Planning

1999 American Institute of Certified Planners inaugurates a College of Fellows to recognize distinguished individual contributions by longer term AICP members. History of Planning Profession

2000 President Clinton Creates 8 new national monuments in 5 western states: Canyons of the Ancients (Colorado); Cascade-Siskiyou (Oregon); Hanford Reach (Washington); Ironwood Forest, Grand Canyon-Parashant, Agua Fria (Arizona); Grand Sequoia, California Coastal (California). He also expanded one existing national monument in California (Pinnacles). Conservation & Environment

2001 The New York World Trade Center and the Pentagon are attacked by terrorists, causing many to rethink security measures, including design changes to protect the public from future attacks. Ornamental bollards, large planters, and retractable barricades are installed around many public buildings nationwide. Planned Communities

2002 The US Supreme Court, in *Sierra v. Tahoe* rules that a temporary building moratorium for the purpose of conducting planning studies to protect the public health, safety, welfare, and morals is a legitimate use of police power and does not constitute a taking of any kind. Landmark Laws Conservation & Environment

2004-05 Seven major hurricanes impact the southeastern United States during the busiest hurricane seasons on record to date, leaving billions of dollars of damage and hundreds of lost lives in their wake. This prompts a comprehensive review of emergency preparedness, floodplain and coastal development, and security issues. Conservation & Environment

2005 The US Supreme Court in *Kelo v. City of New Haven* upholds the decades-old practice of utilizing urban redevelopment and eminent domain for economic development purposes when such actions are backed by a redevelopment plan that underwent a full plan development process. Landmark Laws Economic Development Housing

2005 In other decisions, the US Supreme Court held that a taking dispute that is resolved at the state level cannot be relitigated at the federal level (*San Remo Hotel v. San Francisco*), and overturned the "substantial advancement" test established in *Agins*.

2006 The fluctuation in petroleum prices caused by the War on Terror, the hurricanes of 2005, and other factors start a debate on the sustainability of a petroleum-based society/lifestyle, and serious discussions on renewable resources. Conservation & Environment

Planning Law

A Timeline of Landmark Laws and Decisions

Note: This section reiterates the legal elements of the "Planning History" section above. It places Statutory and administrative laws on the left and the judicial decisions on the right.

1785

Ordinance of 1785. Provided for the rectangular land survey of the Old Northwest. The rectangular survey has been called "the largest single act of national planning in our history and ... the most significant in terms of continuing impact on the body politic" (Daniel Elazar).

1862

Homestead Act opened the lands of the Public Domain to settlers for a nominal fee and five years residence.

Morrill Act. Congress authorizes land grants from the Public Domain to the states. Proceeds from the sale were to be used to found colleges offering instruction in agriculture, engineering, and other practical arts.

1887

In the case *Mugler v. Kansas* the US Supreme Court ruled that the courts have the duty to strike down local laws that do not have a real or substantial relation to the police power: to protect the health, safety, welfare, and morals of the community.

1891

General Land Law Revision Act gave President power to create forest preserves by proclamation.

1896

United States v. Gettysburg Electric Railway Co. The first significant legal case concerning historic preservation. The U.S. Supreme Court rules that the acquisition of the national battlefield at Gettysburg served a valid public purpose.

1897

Forest Management Act. Authorized some control by the Secretary of the Interior over the use and occupancy of the forest preserves.

1901

New York State Tenement House Law. The legislative basis for the revision of city codes that outlawed tenements such as the "Dumbbell Tenement." Lawrence Veiller was the leading reformer.

1902

U.S. Reclamation Act. Created fund from sale of public land in the arid states to supply water there through the construction of water storage and irrigation works.

1903

President Theodore Roosevelt appoints a Public Lands Commission to propose rules for orderly land development and management.

1906

Antiquities Act of 1906: First law to institute federal protection for preserving archaeological sites. Provided for designation as National Monuments areas already in the public domain that contained "historic landmarks, historic and prehistoric structures, and objects of historic or scientific interest."

1907

President Roosevelt establishes an Inland Waterway Commission to encourage multipurpose planning in waterway development: navigation, power, irrigation, flood control, water supply.

1909

The US Supreme Court upholds municipal regulation of building heights in the case *Welch v. Swasey*. This validated the use of construction standards to uphold public safety.

1915

In *Hadacheck v. Sebastian*, the US Supreme Court upheld a municipal regulation that governed the placement of land uses.

1916
Nation's first comprehensive zoning resolution adopted by New York City Board of Estimates under the leadership of George McAneny and Edward Bassett, known as the "Father of Zoning."

National Park Service established with sole responsibility for conserving and preserving resources of special value.

1918
U.S. Housing Corporation and Emergency Fleet Corporation established. Influenced later endeavors in public housing. Operated at major shipping centers to provide housing for World War I workers.

1922
Pennsylvania Coal Co. v. Mahon. The first decision to hold that a land use restriction constituted a taking. The U.S. Supreme Court (Justice Brandeis dissenting) noted "property may be regulated to a certain extent, [but] if regulation goes too far it will be recognized as a taking," thus acknowledging the principle of a "regulatory taking."

1924
U.S. Department of Commerce under Secretary Herbert Hoover issues a Standard State Zoning Enabling Act.

1926
Village of Euclid v. Ambler Realty. Constitutionality of zoning upheld by the U.S. Supreme Court. (Case argued by Alfred Bettman.)

1928
U.S. Department of Commerce under Secretary Herbert Hoover issues a Standard City Planning Enabling Act.

1928
In *Nectow v. City of Cambridge*, the US Supreme Court struck down as unconstitutional a local zoning ordinance that was not reasonably tied to a valid public purpose under the police power.

1929
Wisconsin law, first instance of rural zoning, authorized county boards "to regulate, restrict and determine the areas within which agriculture, forestry and recreation may be conducted."

1932
In *Bove v. Donner-Hanna Coke Corp*, the court ruled that an owner cannot make use of his property if it creates a material annoyance to his neighbor or if his neighbor's property or life is materially lessened by the use.

1933
Federal Emergency Relief Administration set up under Harry Hopkins to organize relief work in urban and rural areas.

Tennessee Valley Authority created to provide for unified and multipurpose rehabilitation and redevelopment of the Tennessee Valley, America's most famous experiment in river-basin planning. Senator George Norris of Nebraska fathered idea, and David Lilienthal was its most effective implementer.

1934
National Housing Act. Established FSLIC for insuring savings deposits and the FHA for insuring individual home mortgages.

Taylor Grazing Act is passed, its purpose to regulate the use of the range in the West for conservation purposes.

1935

Resettlement Administration established under Rexford Tugwell, Roosevelt "braintruster," to carry out experiments in land reform and population resettlement. This agency built the three Greenbelt towns (Greenbelt, Maryland; Greendale, Wisconsin; Greenhills, Ohio) forerunners of present day New Towns: Columbia, Maryland; Reston, Virginia; etc.)

Soil Conservation Act. Congress moves to make prevention of soil erosion a national responsibility

The Historic Sites, Buildings and Antiquities Act, a predecessor of the National Historic Preservation Act, passed. Requires the Secretary of the Interior to identify, acquire, and restore qualifying historic sites and properties and calls upon federal agencies to consider preservation needs in their programs and plans.

Social Security Act passed to create a safety net for elderly. Frances Perkins, Secretary of Labor and first woman cabinet member, was a principal promoter.

1937

U.S. Housing Act (Wagner-Steagall). Set the stage for future government aid by appropriating $500 million in loans for low-cost housing. Tied slum clearance to public housing.

Farm Security Administration established, successor to the Resettlement Administration and administrator of many programs to aid the rural poor.

1944
Serviceman's Readjustment Act ("G.I. Bill"). Guaranteed loans for homes to veterans under favorable terms, thereby accelerating the growth of suburbs.

1947
Housing and Home Financing Agency (predecessor of HUD) created to coordinate federal government's various housing programs.

1949
Housing Act (Wagner-Ellender-Taft Bill). First U.S. comprehensive housing legislation. Aimed to construct about 800,000 units. Inaugurated urban redevelopment program.

1954
Housing Act of 1954. Stressed slum prevention and urban renewal rather than slum clearance and urban redevelopment as in the 1949 act. Also stimulated general planning for cities under 25,000 population by providing funds under Section 701 of the act. "701 funding" later extended by legislative amendments to foster statewide, interstate, and substate regional planning.

1956
Congress passes multibillion dollar Federal Aid Highway Act to create interstate highway system linking all state capitals and most cities of 50,000 population or more.

1959
Congress establishes the Advisory Commission on Intergovernmental Relations (ACIR), with members from various branches of government. Serves primarily as a research agency and think tank in area of intergovernmental relations.

1954
In *Berman v. Parker,* U.S. Supreme Court upholds right of Washington, D.C. Redevelopment Land Agency to condemn properties that are unsightly, though non-deteriorated, if required to achieve objectives of duly established area redevelopment plan.

In *Brown v. Board of Education* (Topeka, Kansas), Supreme Court upholds school integration.

1961

Hawaii becomes first state to institute statewide zoning.

1964

Civil Rights Act outlaws discrimination based on race, creed, and national origin in places of public accommodation

1965

Housing and urban policy achieve cabinet status when the Housing and Home Finance Agency is succeeded by the Department of Housing and Urban Development. Robert Weaver becomes HUD's first Secretary and nation's first African-American cabinet member

Congress passes the Water Resources Management Act authorizing Federal-Multistate river basin commissions.

The Public Works and Economic Development Act passes Congress. This act establishes the Economic Development Administration to extend coordinated, multifaceted aid to lagging regions and foster their redevelopment

The Appalachian Regional Planning Act establishes a region comprising all of West Virginia and parts of 12 other states, plus a planning commission with the power to frame plans and allocate resources.

1966

The Demonstration Cities and Metropolitan Development Act launched the "model cities" program, an interdisciplinary attack on urban blight and poverty. A centerpiece of President Lyndon Johnson's "Great Society" program.

National Historic Preservation Act passed. Establishes the National Register of Historic Places and provides, through its Section 106, for the protection of preservation-worthy sites and properties threatened by federal activities. This act also creates the national Advisory Council on Historic Preservation and directs that each state appoint a State Historic Preservation Officer (SHPO).

Section 4(f) of the Department of Transportation Act provides protection to parkland, wildlife refuges, and other preservation-worthy resources in building national roads. Unlike parkland and wildlife refuges, however, privately owned historic sites as well as those in public ownership are protected by Section 4(f).

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To implement Intergovernmental Relations Act of 1968 the Office of Management and Budget issues Circular A-95 requiring state and substate regional clearinghouses to review and comment on federally assisted projects to facilitate coordination among the three levels of government.

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1994

In *Dolan v. City of Tigard,* the U.S. Supreme Court rules that a jurisdiction must show that there is a "rough proportionality " between the adverse impacts of a proposed development and the exactions it wishes to impose on the developer.

1996

The Telecommunications Act realigns the telecommunications industry by allowing competition. It also impact local land use by requiring telecommunications towers be permitted wherever a gap in coverage is found, and prohibits local consideration of health effects in permitting decisions.

1998

In *Borgmann v Board of Supervisors*, the Iowa Supreme Court struck down "right-to-farm" legislation ruling it was 1) an unequal application of law and 2)an indirect *de facto* taking of abutting non-farm properties.

2002

The US Supreme Court, in *Sierra v. Tahoe* rules that a temporary building moratorium for the purpose of conducting planning studies to protect the public health, safety, welfare, and morals is a legitimate use of police power and does not constitute a taking of any kind.

2005

The US Supreme Court in *Kelo v. City of New Haven* upholds the decades-old practice of utilizing urban redevelopment and eminent domain for economic development purposes when such actions are backed by a redevelopment plan that underwent a full plan development process.

In San Remo Hotel v. San Francisco, the US Supreme Court ruled that a takings dispute resolved at the state level cannot be re-litigated at the federal level.

The US Supreme Court overturns the troublesome "substantial advancement" test established in *Agins* (1980, above) in its decision in *Lingle v. Chevron*.

In Rancho Palos Verdes v. Abrams, the US Supreme Court rules that zoning review under the Telecommunications Act does not include monetary damages or a lengthy review period.

Planning Theory

MAJOR PLANNING THEORIES (I.E. MODELS OF THE PLANNING FUNCTION)

1. **Synoptic Rationalism**: In philosophy in general, rationalism is the foundation and embodiment of the scientific method. It serves the same role in planning theory. The rationalist model of the planning process generally contains the following steps.

2. **Incrementalism**: This theory – which was espoused by Charles Lindbloom in *The Science of Muddling Through* – is a practical response to rationalism. Planning is seen as less of a scientific technique and more of a mixture of intuition and experience. Major policy changes are best made in little increments over long periods of time. Incrementalism very accurately describes what actually occurs in most planning offices on a daily basis.

3. **Transactive Planning**: Like incrementalism, transactivism does not view planning purely as a scientific technique. Transactivism espouses planning as a decentralized function based on face-to-face contacts, interpersonal dialogues, and mutual learning. Transactivism is roughly behavioralist-style planning.

4. **Advocacy Planning**: Advocacism abandons the objective, non-political view of planning contained in rationalism. Planners become like lawyers: they advocate and defend the interests of a particular client or group (which is preferably economically disadvantaged and/or politically unorganized or underrepresented).
   - Paul Davidoff was an early champion of advocacy planning. He argued that there is no one public interest for planners to serve, and thus, that planners have no choice but to become non-objective advocates for specific interests and groups.
   - Saul Alinsky developed an advocacist vision of planning that is centered around so-called "organizations." Alinsky's organizations develop where people feel powerless. These organizations then hire planners (which Alinsky largely sees as political organizers) to identify problems, develop an awareness of these problems, and generate action.
   - Alan Altshuler also argued for abandoning the objective, non-political view of planning. He felt that to be effective, planners must become actively involved in the political process.

5. **Radical Planning**: In a sense, radicalism takes transactivism to its logical extreme. Radicalism hates hierarchical bureaucracies, centralized planning, and domineering professional planners. It argues that planning is most effective when it is performed by non-professional neighborhood planning committees that empower common citizens to experiment with solving their own problems. The ideal outcomes of this process are collective actions that promote self-reliance. Much of the radical planning literature that I have personally read is based on Marxist interpretations and theories.

6. **Utopianism**: Utopianism believes that planning is most effective when it proposes sweeping changes that capture the public imagination. Daniel Burnham's *Plan of Chicago*, Frank Lloyd Wright's *Broadacre City*, and Le Corbusier's *La Ville Contemporaine* are often cited as utopian works.

7. **Methodism**: Methodism addresses situations in which the planning techniques that should be used are known, but the ends that should be achieved by these techniques are not. Such a situation would be making a population projection just to have it handy when it is needed. Methodism views planning techniques as ends into themselves.

DISSECTING TECHNIQUES

Dissecting techniques are used to produce theories about planning's function in society. These techniques are based on describing what planners *actually do*, and not on idealized visions of what planners *should be doing*. Incrementalism and methodism are partially products of dissecting techniques.

ARNSTEIN'S "LADDER OF PARTICIPATION"

Arnstein's theory divides public participation in policymaking and planning into three major levels – based on the power that the general public actually has.

1. non-participation (the general public is manipulated)
2. tokenism (the general public is informed, consulted, and placated)
3. citizen power (the general public becomes a partner with actual control over policy)

Patterns of Human Settlement

MAJOR THEORIES OF URBAN SPATIAL ORGANIZATION

1. **Cocentric Theory** (Burgess, 1925): A city is seen as a set of cocentric rings (these rings are roughly listed, in order, below). As the city grows, each ring invades and overtakes the next ring out – a process called **Invasion/Succession** (thus, Cocentric Theory is sometimes referred to as "**Invasion/Succession Theory**").
   - The central business district (CBD)
   - Independent worker housing
   - Better housing
   - Commuter/suburban housing

2. **Sector Theory** (Hoyt, 1939): High-density residential, commercial, and industrial uses radiate out from the central business district (CBD) in "sectors" that follow major transportation routes. More expensive housing also radiates out from the CBD – towards large open spaces and higher ground. Less expensive housing takes whatever land is left over.
3. **Multiple Nuclei Zone Theory** (Harris and Ullman, 1945): Certain land uses group together to take advantage of unique facilities (e.g., universities), specializations, co-dependencies, or externalities. This theory is often applied to cities with more than one CBD.

Emerging Issues and Trends

Impacts of Change

The statements that follow are intended as a spring board to deeper consideration of each topic. They are by no means comprehensive or intended to be complete.

1. **Social Changes**:
   Social change typically happens slowly over the course of years or even decades. Faster change generally is met with opposition, which can be severe. Social change can occur through empowerment at the grassroots level, social unrest, or revolution (to name a few). The integration of the telephone into everyday life is an example of typical social change. The Civil Rights Movement of the 1960s is an example of change brought about by unrest.

2. **Economic Change**
   Economic change – we would like to think – is generally upward. With the understanding of the economic cycle, we know there are peaks and valleys, however. Like social change, economic change overall is gradual. Abrupt changes in either direction generally cause great stress and unrest. Paradoxically, affluence tends to bring a detachment from society and the environment that is generally detrimental, while being less well-of tends to keep one closer to other people and the world around.

3. **Demographic Change**
   The average US citizen believes that demographic increases are generally good when it comes to local economy and society. However, many believe the world is already overcrowded and unable to sustain additional population. The world population is increasing at a great rate, but the population migrates from place to place, impacting localities. The natural course of localities is to wax and wane over time, with some enjoying long-term viability and success, and others fading to oblivion.

4. **Technological Change**
   Technological changes impact many facets of our lives. After all, "sloth is the mother of invention." The Twentieth Century by far saw the fastest advance of technology in recorded history, much of it enabled by the harnessing of electricity. The impact of household appliances, the automobile, and modern communication devices is immeasurable. It can't help but to affect the way we see the world – and each other.

Current Topics

We believe the following to be "current topics" as we start into 2007:

HAZARD MITIGATION PLANNING

The Hazard Mitigation Plan

The events of the first half of this decade brought this tool into focus. Hazard Mitigation Planning, like other forms of planning, is a process whereby possible hazards facing a

community are identified, pre-emptive mitigation measures that may be available for each type of hazard, the possible effects of each type of hazardous event, the necessary response(s) to each type of event, and recovery. The tool is heavily promoted by the Federal Emergency Management Agency to the State and the County level.

Continuum of Government/Leadership

A major portion of any Hazard Mitigation Plan is the provision for a continuation of leadership and order in the event of a catastrophe. The Continuum of Government (Public Sector)/Continuum of Leadership (Private Sector) outlines chains of command, chains of succession, essential functions and employees, standard operating procedures for all functions, communication protocols, and recovery. This answers the question, "if an event occurs and all the top officials are incapacitated, what happens next?"

Incident Response

All municipal employees (at a minimum) should know the basics of incident response. Federal funding to all governmental units is starting to be attached to this knowledge irregardless of how distant the relationship may be between the money and incident response.

PROPERTY RIGHTS

Eminent Domain and Public Purpose

Eminent Domain is based on the concept that the government bears the ultimate responsibility over all property within its jurisdiction, and that to fulfill its obligations, the government therefore has a right to take ownership of property within its jurisdiction to fulfill a public purpose. In the United States, eminent domain cannot be exercised without just compensation to the owner from which the property is taken.

Recent attention is being given to the idea of "public purpose." The now-famous Kelo case decided by the US Supreme Court in 2005 upheld the long-standing practice that eminent domain could be used in conjunction with economic development. But there was a catch that is not commonly placed in the public's eye: the economic development must be tied to a public purpose that is identified through a legitimate and thorough planning process. Because New Haven, CT had undergone an extensive redevelopment planning process within the public realm, and that planning process identified economic development as one of the public purposes, the Court upheld the use of eminent domain.

Regulatory Takings

A regulatory taking is the concept that any loss in value a property experiences as a result of a regulation is a taking that must be compensated. The idea is also being discussed as a result of the Kelo case, primarily because the common citizen does not recognize a difference between this and an outright taking. See the law and the history notes for more on regulatory takings.

Oregon's Measure 37

By voter referendum, it is now a requirement in Oregon that any land regulation that devalues property in any way entitles the owner of such land to either 1) be compensated to the amount the property is devalued, or 2) be basically exempted from that regulation. The measure is basically a super-sized grandfather clause – it only applies to the person who owned the property when the regulation passed, or a direct descendent.

SUSTAINABLE ENERGY

Petroleum Dependence

The fluctuating petroleum prices since mid-2005 indicate instability in the industry or the market. Either way, the supply of petroleum and petroleum products has an enormous impact on our economy and society. Petroleum fuels our transportation system, is an essential ingredient in all things made of plastic, and paves many of our roads.

"Peak oil" is a term being used in the past two years to describe a situation where the petroleum output is at its maximum with a continued to increase in demand. This would create a severe shortage. With China and India now demanding a much larger share of the petroleum supply than they had at the close of the century, and the demand of the rest of us still steadily increasing, this is not an impossibility.

As planners, we need to consider the impact a severe and long-term petroleum shortage would have on the economy, society, and land use patterns. But, we should also consider how those three elements also combine to impact our demand for petroleum products (not just gasoline).

Renewable Energy

Consider four renewable energy sources: wind, water, solar, and geothermal.

Wind: Wind energy is the harnessing of moving air currents to turn a turbine and create electric energy. It is site sensitive in that the turbines need to be located where there is sufficient wind velocity and constancy generate a constant flow of power. Most wind power is supplemented by traditional sources such as coal. Wind turbines are controversial due to the visual impact they have on the surrounding community. Because they need to "catch" the wind, they are generally located in highly visible points and can be seen for miles around.

Water: Water power is using flowing water currents to turn turbines to create power. Like wind power, it is site sensitive, generally requiring large amounts of water and large topographical differences to create a constant flow of sufficient strength to generate power. Unlike wind power, hydrologic power plants do not need to be supplemented and are not generally as controversial in terms of their impact, although controversy will arise if the power plant needs a reservoir built to supplement or sustain the flow. These reservoirs can double as recreation facilities and become focal points for the host communities.

Solar: Solar power converts the radiation from the sun into heat and electric power. Indeed, the amount of solar energy intercepted by the earth each minute exceeds the amount of fossil-fuel-produced energy consumed worldwide in an entire year. It requires panels that collect the radiation and convert it to power or distribute it as heat. If it is converted to power, it must either be consumed immediately or stored in any one of a myriad of methods of power storage.

Geothermal: Geothermal heat rises in convective waves from deep in the earth. It generally requires deep pipes or wells to harness the convective force and make it useful. It is the most efficient heating and cooling method for most buildings. For power, the heat is harnessed and is set to turn a turbine or generator to create power. Geothermal requires the presence of the heat convection phenomenon to be successful.

HEALTHY LIVING

The healthy living movement seeks to ensure that communities are designed in a manner that encourages people to do more that sit all day long. Development patterns of the latter 20th Century encouraged a lax lifestyle: people sit while driving, sit while working (usually at a desk), sit while socializing at home (usually around a TV), and so forth. This lifestyle also tended to isolate everyone into their own homes and destroyed neighborhood. The healthy living movement seeks to encourage walking and cycling as alternative transport modes, encourages neighbors to come together again, children to play outside in active recreation. This is done through design and community layouts as well as providing other amenities that elevate such activities in the social realm.

AMERICAN COMMUNITY SURVEY

The American Community Survey is a new program by the US Census Bureau that continually updates the information traditionally collected using the "long form" during the decennial census. Through the new program, data are collected from the various areas on a continuous rolling cycle and statistically adjusted to provide current information on many of the socioeconomic indicators that are important to community planning.

TOPICS MENTIONED BY AICP IN THE CPE BULLETIN

The following three topics are specifically mentioned under this heading in the *Comprehensive Planning Examination Bulletin of Information for Candidates*. However, they have been around long enough that the needed information was integrated into the notes now appearing under the Functional Topics and Plan Implementation headings before the notes were reorganized to match the ACIP *Outline of Subject Matter*. Location of this information is as follows:

Smart Growth
See Plan Implementation -> Growth Management Techniques

Neo-Traditional Planning
See Functional Topics -> Urban Design

Sustainable Development
See Functional Topics (Generally) and Plan Implementation -> Growth Management Techniques

Plan Making

Strategic Planning & Visioning

TYPES OF PLANNING AGENCIES

1. **The Planning Department**: Here, the planning agency is a department within the municipality's executive branch. The planning director reports to the municipality's chief executive. The planning commission merely has an advisory role.
2. **The Independent Planning Commission**: This is the traditional planning agency form. The planning commission members are appointed by the governing body or the chief executive. The agency's staff is solely responsible to the planning commission.
   - Independent planning commissions were intended to isolate planning from politics. However, Robert Walker's 1941 book *The Planning Function in Urban Government* argued that planning should be closer to the municipality's executive branch. Walker felt that independent planning commissions were too removed from the executive to be effective.

3. **The Community Development Commission**: In this form, planning, code enforcement, economic development, and housing activities are grouped together in an agency that is similar to the "planning department" discussed above. Although planning is more closely linked to implementation in this form, economic development concerns often co-opt planning.
4. **Separate Line and Staff Departments**: The three forms above contain both line and staff functions. This form separates these functions. The staff planning department performs policy analysis for the governing body, the chief executive, and the other municipal departments. The line planning department performs subdivision reviews, zoning ordinance amendments, and code enforcement.
5. **Combinations or variations of the above**: Although these were the only four forms described by Louise Mercuro, one can easily think of planning agencies that are combinations or variations of these forms.

PLANNING AGENCY SUB-UNITS

1. There are advantages to breaking a planning agency into departments or "sub-units."

   - It promotes efficiency by clarifying individual responsibilities and developing individual expertise.
   - Clients can more easily identify the staff members that are relevant to their concerns.
   - Interruptions to long-range planning activities can be minimized.
2. However, there are disadvantages to breaking a planning agency into departments or "sub-units."

   - It can reduce flexibility.
   - Isolated staff members may lose a comprehensive view of the agency's role.
   - The agency's organization may begin to dictate its work program.

3. Planning agencies are most often divided into departments or "sub-units" by…

    - Function (e.g., transportation planning, land use planning, CDBG, subdivision reviews)
    - Process (i.e., the steps necessary to the agency's work, such as research and development or demographic analysis)
    - Time (e.g., current planning, long-range planning)
    - Area (i.e., staff members are assigned to geographic areas within the involved municipality)
    - Combinations of the above

STRATEGIC PLANNING

1. According to page 405 of *The Practice of Local Government Planning*, "strategic planning, as it is used in the private sector and should be used in the public sector, is a plan *for the organization*…" and not for the municipality as a whole. However, many municipalities use strategic planning in place of the traditional comprehensive planning process. Others simply import elements of strategic planning into traditional planning.
2. *The Practice of Local Government Planning* says that strategic planning can be seen as one of the three levels of planning that are present in all management systems. In this view of management…
    - *Strategic planning* sets goals, objectives, and policies for reaching those objectives
    - *Management planning* evaluates specific programs on the basis of how they conform with the above policies (budgeting falls here)
    - *Operational planning* (or operational control) is concerned with managing the above programs
3. Although there are many different models of strategic planning, *The Practice of Local Government Planning* displays the following one on page 406.

    - Scan the environment. Identify key factors and trends that are important to the future. Determine how external forces will influence events. Identify what the organization's mandates are.
    - Select key issues based on the above scan.
    - Set "mission statements" or broad goals that will establish the direction of the strategy development process.
    - Conduct external and internal analyses. Look in depth at outside forces that will affect the achievement of the above goals. Identify the organization's strengths (i.e., resources), weaknesses, opportunities, and threats.
    - Develop specific goals, objectives, and strategies for each key issue based on the above broad goals and analyses.
    - Develop an implementation plan that specifies timetables, resources, and responsibilities.
    - Monitor, update, and scan the implementation process and the changing environment. Strategic planning is an ongoing activity.

THE PLANNING DIRECTOR

1. According to page 428 of *The Practice of Local Government Planning*, the planning director's leadership role within a planning agency is composed of "at least" the following four elements.

    - The communication of the agency's goals to subordinates
    - The motivation of subordinates
    - The coordination of subordinates
    - The reporting of the agency's work and accomplishments

2. *The Practice of Local Government Planning* lists the following strategies that planning directors may use in dealing with elected officials or decisionmakers.

    - **The technical expert strategy**: Here, the director promotes planning as an objective, politically-neutral, technical tool that decisionmakers can use to help them understand issues and make decisions. It presumes that the agency's staff is highly skilled, and that the decisionmakers value technical information.
    - **The confidential adviser strategy**: Here, the director establishes relationships with decisionmakers that are largely based on personal trust and a successful track record.
    - **The innovator strategy**: Here, the director develops a reputation as a highly visible innovator who often advocates solutions that are bold or that haven't been previously considered. The decisionmakers then develop strategies by observing how the community reacts to the director's ideas.

THE PLANNING PROCESS

1. Pages 10 and 11 of *The Practice of Local Government Planning* list "five major steps" of the planning process "at the most general level of planning and management…"

    - **Basic goals**: Determine the municipality's basic goals (e.g., Do we want to grow? How?).
    - **Study and analysis**: Study the municipality's land use, demographic, transportation, and economic characteristics and trends. Analyze its environmental and economic constraints.
    - **Plan or policy preparation**: Develop a plan or policy statement that says how, where, and when the municipality will develop.
    - **Implementation and effectuation**: Use tools such as zoning ordinances, subdivision/land development ordinances, growth management techniques, and capital improvement programs to implement the above plan or policy statement.
    - **Monitoring and feedback**: Monitor the achievement of the above plan or policy statement. Adjust the implementation tools if necessary. Prepare for the next planning process.

2. Page 11 of *The Practice of Local Government Planning* states that "in reality, most local planning consists of three steps…"

    - "examining inventories and trends in land use, population, employment, and traffic"
    - "forecasting the 'demand'"
    - "planning facilities and services of sufficient capacity to accommodate future demand"

3. Pages 12 and 13 of *The Practice of Local Government Planning* provide a more detailed nine-step planning process.

    - Take inventories and identify trends in the municipality's land use, demographic, economic, and transportation characteristics.
    - Forecast the municipality's land use, demographic, economic, and transportation characteristics on a "what if" basis.
    - Identify goals and objectives with extensive public participation.
    - Formulate, test, and compare alternative policies and plans.
    - Compare and evaluate these alternative policies and plans. Look at the extent to which each meets the above goals and objectives, is environmentally acceptable, and is fiscally, politically, and legally feasible.
    - Select the most acceptable policy and/or plan. Review the involved forecasts and assumptions to determine (1) how congruent the plan is with the data obtained in the first step, and (2) how much compromise was necessary to select the most acceptable plan.
    - Prepare detailed plan elements (e.g., for housing, transportation, and land use).
    - Implement the plan through both public and private means.
    - Continuously evaluate the plan and the processes that created it. Adjust the implementation measures and re-plan as necessary.
4. Pages 13-16 of *The Practice of Local Government Planning* list five "levels" or types of plans.

    - **Comprehensive Plans (a.k.a. "master" or "general" plans)**: A comprehensive plan's geographic scope is usually an entire municipality, its "time scale" is usually long-term, and its elements usually address demographics, economic development, transportation, land use, community facilities, public utilities, environmental characteristics/constraints, and recreational opportunities. It is "comprehensive" in that it tries to link long-range objectives to a number of interdependent elements. Page 14 of *The Practice of Local Government Planning* states that recently, comprehensive plans "have tended not to be presented in map form… instead most plans are a series of policy statements."
    - **System Plans**: A system plan sets the policies and programs for a specific network of community-wide facilities, such as a sewerage system.
    - **District Plans (a.k.a. "area" plans)**: A district plan usually deals with the same subjects as a comprehensive plan. However, it does so in more detail, and its geographic scope is limited to only one part of the municipality (e.g., downtown). Lot-specific land use inventories and plans, full market real estate analyses (involving studies of both supply and demand), visual form surveys, land assemblage proposals, and detailed traffic circulation, parking, housing, economic development, and economic revitalization analyses and plans are more likely to be part of a district plan than a comprehensive plan.
    - **Subsystem Plans**: A subsystem plan is a detailed engineering plan for a subsystem of a community-wide facility.
    - **Site Plans**: A site plan is a plan for a site or a specific component of a community-wide facility, such as a sewage treatment plant or a library.
5. In 1925, the City of Cincinnati became the first American municipality to officially adopt a comprehensive plan that meets the above definition.

6. Each element of a comprehensive plan usually contains (1) a description of existing conditions, (2) a statement of goals and objectives, and (3) a description of future needs and proposals for meeting those needs.
7. **"Goals** are value-based statements that are not necessarily measurable. **Objectives** are more specific, measurable statements of desired ends."
8. "The recommendations of the plan – are usually described in the form of policies, programs, and projects. **Policies** are rules or courses of action that indicate *how* the goals and objectives of the plan should be realized. **Programs** are a series of related, mission-oriented activities aimed at carrying out a particular policy or group of policies. Programs often consist of a series of **projects**, which are specific actions or 'brick-and-mortar' recommendations."
9. "Traditional planning was essentially a technical exercise. Modern planning practice is both normative and technical… **Normative planning** develops the broad, general basis for action, whereas **technical planning** is concerned with specific, established purposes and the procedures employed in achieving those purposes. One is concerned with values, the other with methods. An effective plan should deal equally with the normative and the technical… in the middle zone between the politician and the bureaucrat."

VISIONING

1. Visioning is a public participation technique that is used to develop goals and objectives, which are often referred to as "themes" in the visioning literature. These themes are then compiled into a "vision statement," which is a preferred image of the community's long-range future.
2. Visioning is typically used at the beginning of the planning process.
3. A representative sample of the community is assembled in an informal setting. An impartial group leader is used to direct the discussions. Projections and illustrations are often used to show the consequences of the group's choices.

Goal Setting

PUBLIC PARTICIPATION

Public participation techniques and social justice issues are discussed more fully in the "Public Interest" section. This area will touch briefly on public participation as it relates goal setting.

- In setting goals, the public must be engaged as early in the process as possible. Ideally, it is the public itself that identifies the need to set new goals.

- Before the goals and objectives can be developed, the problem(s) must be defined. While some direction is usually needed, ideally the public will do the defining.

- Once engaged, the public involvement must continue through the development and implementation stages of the project.

- The planner is a catalyst, or surrogate in the process and must not inject personal opinion or bias into the process (so far as is possible). That said, the planner is responsible to guide the public through the process to achieve a meaningful and tangible conclusion.

- The goal setting, development, and implementation processes must be kept open and transparent to the public to remain legitimate in its eyes.

- The necessary information must be presented, including information adverse to prevailing opinion, supportive of distasteful outcomes, and empowering to underrepresented groups.

- The planner must identify the proper techniques to be used as well as the appropriate constituencies to be included, based on the issues at hand.

GOALS & OBJECTIVES

- A **Goal** is a desired outcome of a process. It is expressed in general terms.

- An **Objective** is also a desired outcome of a process. It is expressed in specific terms and can be more easily measured. Objectives generally support the achievement of goals.

- Goals and objectives must be based on community will backed by a sound analysis of current and historical conditions.

- Setting a goal that is too broad or too distant in the future will likely result in apathy toward that goal. An exception would be a continual program with a goal that is necessarily long-term with strong objectives to carry the process through to the goal (i.e. a blight eradication program might be a continual program with a long-term goal of no blighted structures in residential areas. Specific objectives may be to acquire and raze *x* units per year, impose a fee on owners of vacant structures, code and law enforcement taking a keen interest, etc.).

- Well-written goals require well-defined problems and a thorough understanding of the problem the goal is written to overcome.

- Successful goals include a number of well-defined and measurable objectives to point the way to completion.

- A good objective is developed within the context of the goal it supports, is single-purpose, and can be measured. Objectives can be further supported by “guidance” or “recommendations” that further clarify the objective or include some sub-steps which help achieving the objective and the goal it supports.

TESTS OF MEASUREMENT FOR PROGRESS

- Both goals and objectives must be revisited periodically to evaluate continued relevancy and to determine if the community is still on-target in achieving the stated goal.

- Goals and objectives may need to be reconsidered if the situation has changed significantly enough that a rewrite or elimination is the prudent course of action.

- Progress in achieving goals is generally measured through the accomplishment of the supporting objectives.

- Objectives should be written in a way that allows easy measurement of progress. (i.e. "The town will construct *x* affordable housing units each year until year *y*.") The actual number can be compared against *x* for a measure of progress (or lack thereof).

- Tying goals to community activity (like development activity) or budget line items (like capital expenses) makes measurement easier and encourages continued progress toward the overall goal.

- Measurement results must be as open and transparent as the process that put the goals and objectives in place to begin with. The public has the right to know how the progress toward the goals it identified is proceeding as well as the right to hold its leadership accountable for lack of progress on any particular goal or objective.

Research Methods & Techniques

DEFINING A PROBLEM

1. Realize there is a problem and form a basic concept of its boundaries and characteristics
2. Specifically place limits on the scope of the problem (state the problem)
3. Develop the database of knowledge
4. Build goals and objectives
5. Identify all solutions
6. Analyze costs and benefits
7. Review the problem statement

SURVEYS

Surveys are a method of collecting information by asking a set of predetermined questions in a predetermined sequence via a controlled questionnaire to a representative sample (subset) of a given population (whole).

1. A **cross sectional survey** is used to evaluate a point in time. A **longitudinal survey** is used to evaluate a situation *over* time.

2. The size of a survey's sample, relative to the population being surveyed, is crucial to the survey's accuracy. An appropriate sample size is determined by statistical confidence, population size, and data integrity.
3. The random nature of a survey's sample is also crucial to the survey's accuracy.
4. There are three commonly used types of surveys.
   - **Mailed surveys**: Mailed surveys are inexpensive, do not involve training or recruiting interviewers, allow the subjects to respond at their own convenience, and provide the subjects with time to answer detailed questions that may require some research (e.g., How much of your monthly mortgage payment is escrowed for local property taxes?). However, they are slow, have a low response rate (15% on average), require clear questions, are inhospitable to open ended questions, and do not work well with the elderly or the poorly educated.
   - **Telephone surveys**: Telephone surveys are fast, are cheaper than in-person surveys, and avoid biases caused by subjects reading ahead. However, they ignore people who don't have telephones, and they require trained interviewers – as well as the monitoring of those interviewers. Furthermore, the quality of telephone survey responses decreases if the questionnaire takes too much time.
   - **In-person surveys**: In-person surveys work well with long questionnaires, can get to hard-to-reach populations, and can record the subject's visual clues. However, they are very expensive and the interviewer can introduce biases.
5. The **sampling frame** is the source and/or method used to draw the sample.
6. Types of sample designs:
   - Random – everyone in the population has an equal chance of being selected
   - System – a list is developed, with every x^{th} person selected
   - Stratified – a given population is divided into multiple strata (classes) from which sampling is conducted.
   - Cluster – a given population is divided into logical sections, with selections made from selected sections
   - Convenience – use the individuals and/or results that are readily available
   - Volunteer – individuals volunteer their participation
7. Survey questions can be either closed-ended (answers predetermined in a multiple-choice environment) or open-ended (respondent provides answers in own words).
8. Improper survey methods commonly in use today include internet polling, customer response, and surveys with improperly written questions.

LITERATURE REVIEW

1. Not all research is quantitative. This necessitates skills in reviewing and analyzing the body of research that has already been done on a subject.
2. Sources of literature will vary by topic. A partial listing of potential sources includes:
   - Books
   - Magazines
   - Professional Journals
   - Maps and Atlases
   - Manuscripts
   - Diaries and Journals
   - Photography

- Sound Recordings
- Artifacts

3. The Internet can also be a good source, however is not as reliable as physical material. Physical materials must be passed through an approval process (editor, peer review, etc.) whereas Internet postings can be done with no review whatsoever. See below.

EMPIRICAL KNOWLEDGE

Empirical knowledge is a body of experience. It reflects what people learn through experience and common sense. The best way to gain such knowledge from others is through a personal interview – similar to a journalist. (It is important when seeking empirical knowledge to separate the "knowledge" from "opinion.")

Much of the information on the Internet would be properly classified as empirical knowledge.

Analysis of Information

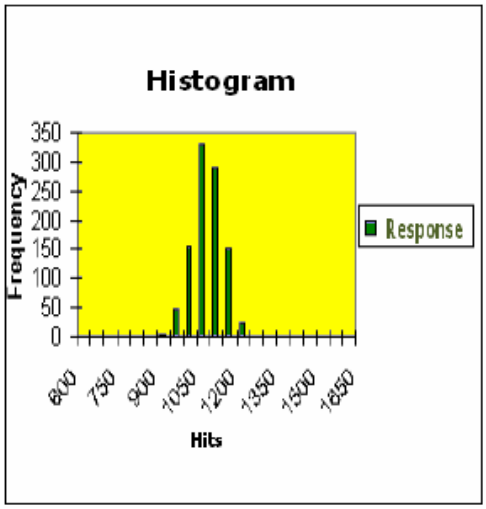
QUANTITATIVE CONCEPTS

It is the purpose of this section to review basic statistical concepts without much depth. A basic "elementary statistics" textbook will provide additional depth and tables if needed for daily practice. The depth here would be considered basic knowledge.

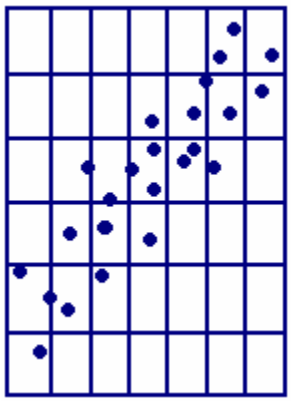
1. A constant is an unchanging value. The most recognized constant is the value for pi: 3.14.
2. There are several types of variables. A **variable** is simply a quantity or function that may assume any given value or set of values. Some prefer this alternate definition: a symbol for an unspecified member of a class of things or statements. Types of variables include:
   - **Qualitative**: a descriptive term used when the above variable types fall on either the nominal or ordinal scale (see below).
   - **Quantitative**: a descriptive term used when the above variable types fall on either the interval or ratio scale (see below).
   - **Continuous**: a variable where the value can change to another at any time.
   - **Dichotomous**: a variable where the value is fixed or static.
   - **Discrete**: a variable where the values are drawn from a finite set.
3. There are four levels of measurement. Each has its unique characteristics providing a range of choices for any type of analysis.
   - The **Nominal Scale** is the assignment of numbers of symbols for the purpose of designating subclasses that represent unique characteristics.
     - Identifying (i.e. SSN, TIN, EIN, etc.)
     - Categorizing (i.e. gender, rank, color, affiliations, etc.)
   - The **Ordinal Scale** is the assignment of numbers or symbols for the purpose of identifying ordered relationships of a particular characteristic without specified intervals.
     - Height order of Mrs. Smith's 1st Graders
     - Population order of PA Counties
     - Richest people in Philadelphia County

- The **Interval Scale** is the assignment of numbers for the purpose of identifying ordered relationships of a particular characteristic with the ability to determine differences in amounts.
  - Temperature
  - Years of sunspot activity
  - Aircraft altitudes
- The **Ratio Scale** is the assignment of numbers for the purpose of identifying ordered relations of some characteristic, with the ability to determine differences and an absolute zero point. The ratio scale meets all the necessary mathematical assumptions to perform arithmetic operations.
  - Length
  - Area
  - Volume
  - Timing

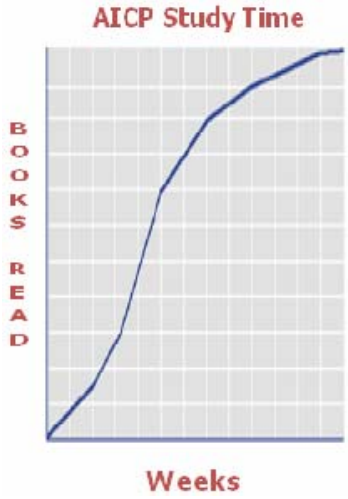
4. Frequency Distribution is used to understand the raw data. Often in frequency distribution, the values are placed in some logical order (i.e. lowest to highest) so the researcher can quickly have a basic grasp of the "feel" of the data. There are several ways to undertake this display.
   - Tabular formats create several columns. The first column contains all possible responses for the measure tested. The second column contains the total number of actual responses for each entry in the first column. Additional columns can contain cumulative frequencies, percentage of totals and other basic measures.
   - Class formats involve grouping the responses into logical categories. The total scope of the groups must encompass the full range of possible responses, and must also be mutually exclusive. A well-known example is map legends showing data classes of population, or grading scales.
   - **Cross-Tabs** are tables showing the joint distribution of two or more categorical variables such as actual counts, percentages, expected values, and residuals. Various measures of association can be obtained between the variables,
   - **Histograms** are a graphical display of frequency distribution. The range of responses is places (usually) on the x-axis and the total number of each response is (usually) plotted against the y-axis. The resulting bar chart produces a very quick display of the data distribution.



- A **Scatterplot** is a two dimensional graph representing a set of bi-variate data



- **Frequency Polygons** are nearly identical to histograms, except the resulting graphic is a line chart.
- An **Ogive** is a frequency polygon that represents cumulative frequency.



- A relatively new branch of knowledge related to frequency distribution is called **Exploratory Data Analysis**. This allows the researcher the advantage of "seeing" the data as in the traditional frequency distribution models discussed above, but maintain data integrity such that the original data set can be reconstructed.
  - The most popular example of exploratory data analysis is the **Stem and Leaf Plot**. This plotting technique separates the digits of actual response values. The first digit(s) become the "stem" and are placed in the left column. The remaining digits become the "leaves" and are arranged in order in the second column, all on the same line. The result looks like a histogram rotated ninety degrees with the "bars" made of numerals.
  - For more information on exploratory data analysis see the book bearing that title by John W. Tuckey.

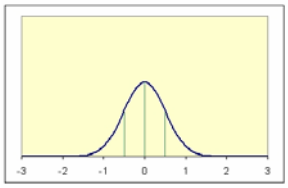
5. Measures of Central Tendency are more commonly known as "Averages." There are multiple ways to compute an average, but all measure data toward the center of the full data set.
   - The **Mean** is the sum of all the values in a data set divided by the total number of values in the set. Often represented by the symbol $\bar{x}$. It is calculated $\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n}$
   - The **Median** is the midpoint value in an ordered distribution. Represented by M_d
   - The **Midrange** is the value produced by adding the highest value and the lowest value and dividing by two. It is calculated $M_R=(x_1+x_n)/2$
   - The **Mode** is the most frequent entry in a distribution. If a distribution has more than one mode, that distribution is said to be **bi-modal**. Represented by M_o.
   - A weighted mean can be calculated where greater emphasis or importance is placed on particular entries, or where the frequency distribution results in a representative value being assigned for each class.
6. Measures of Dispersion (Variance) show how data flows outward from the center of the distribution. There are four basic measures of dispersion: Range, Standard Deviation, Variance, and the Coefficient of Variation.
   - The **Range** is the difference between the highest and lowest value in the data set. The larger the number, the greater the range and thus the greater the dispersion. The formula for a range is" Range – x_n-x_1
   - A **Standard Deviation** is a measure of how much the data in a certain collection are scattered around the mean. A low standard deviation means that the data are tightly clustered; a high standard deviation means that they are widely scattered. There are two common formulas used for standard deviation, both yielding the same result.

$$s = \sqrt{\frac{\sum(x-\bar{x})^2}{n-1}} \qquad \text{or the shortcut:} \qquad s = \sqrt{\frac{n(\sum x^2)-(\sum x)^2}{n(n-1)}}$$

   - **Variance** is the square of the standard deviation. It is a mathematical expectation of the average squared deviations from the mean. The formula is the same as that for the standard deviation except the "*s*" variable is squared, and no square root function is performed.
   - The **Coefficient of Variation**, unlike the other three measures of dispersion measures relative dispersion from the mean rather than absolute dispersion across the field. It is merely the standard deviation divided by the mean (CV = s / $\bar{x}$).
7. **Hypothesis Testing** is conducted to determine outcomes based on the scientific method. First, the statistician must declare the predicted (desired) outcome, then must also identify and describe all possible outcomes.
   - The **Research Hypothesis** (designated H_1) is a statement that describes the interrelationships between different characteristics. It is what the researcher is seeking to prove through the analysis.
   - The **Null Hypothesis** (designated H_0) is the opposite of the research hypothesis. It is what the researcher is seeking to prove wrong so that the research hypothesis can be assumed to be correct by implication.
   - Remember that is easier to prove something wrong than correct (statistically speaking) so the null hypothesis is used.

- There are two kinds of error a researcher can make in hypothesis testing. First is a Type 1 Error, where H_0 is rejected even though it is true. The other kind is a Type 2 Error where H_0 is accepted when it should have been rejected as false.

8. The final part of the basic quantitative concepts are the concepts of distribution. There are two basic types of distribution, each with its own tests. Both are described below, however for our purposes more attention will be given to the parametric distributions.
   A. **Parametric** assumes the data are arranged in a normal distribution and are measured on the interval scale.
      - A **Normal Distribution** is a distribution where the values for the mean and median are equal. This is commonly called a bell curve, and is symmetrical when charted.



      - The ***z*-score** is a measure of the distance, in standard deviation units, from the mean. It is used to determine probability if something would, or would not, happen. The formula for this is $z = (x - \bar{x})/s$. Each of these variables are described above.
      - The ***t*-test** allows us to compare the means of two groups and determine how likely the difference between the two means occurred by chance.
        - The calculations for a *t*-test requires the researcher to know the number of subject in each group, the difference between the means of each group, and the standard deviation for each group.
        - A **correlated *t*-test** is concerned with the difference between the average scores of a single sample of individuals who is assessed at two different times ("before" vs. "after") or on two different measures. The measures must be correlated (co-related), and so it can also compare average scores of samples of individuals who are paired in some way (i.e. parent-child).
        - An **independent *t*-test** compares the averages of two samples that are selected independently of each other. Independent *t*-tests come in "equal variance" and "unequal variance" flavors, but these go beyond the scope of this work.
      - **ANOVA** is an extension of the *t*-test. It stands for **Analysis of Variance**. It allows a composite view of data by assuming that by placing variable *x* into groups, a better understanding of variable *y* will be found.
        - ANOVA identifies the relationship between two variables.
        - The *x* variable is always nominal
        - The *y* variable is always interval
      - Mathematically, a line is expressed as $y = Mx + b$
      - **Correlation** measures the strength of the relationship between variables or the degree to which two variables are correlated (co-related). It is used to demonstrate relationships between situations and/or actors, even disparate ones (think apples and oranges). The test is linear.
        - The correlation is shown on a graph between two variables. The *x* variable is the independent variable and the *y* variable is the dependent variable. This merely means that what *y* becomes is dependent on what *x* actually is.

- The correlation coefficient (represented as r) indicates both the type and the strength in the relationship between the variables. This coefficient can range from as low as -1 to as high as 1. The formula is $r = CV_{xy}/s_x s_y$
- A positive relationship is shown by a general trend of points on a graph moving from the lower left to the upper right. The tighter the points, the stronger the correlation. If the points line up exactly, it is a perfect correlation (numerically, r=1).
- An inverse relationship is shown by a general trend of points on a graph moving from upper left to lower right. Same concepts apply for tightness and perfect alignment (numerically, r=-1).
- If the points are scattered all over the face of the graph the correlation between the variable is weak or non existent (numerically, r=0).
- By squaring the correlation coefficient (r^2), the researcher can see how much one variable explains another. For example, if r^2 = .2312, then the independent variable x accounts for 23.12% of variable y's variability.
- Keep in mind that correlation does not demonstrate "cause and effect."

- **Regression** is a statistical test of the effect one variable (condition/actor) has on another while holding all other conditions constant. This test is also linear. If there is no correlation, there is no need to utilize a regression test. Regression allows us to predict the value of one variable give the value of the other, or explore the relationships between variables.
  - There is always one dependent variable (y) in regression.
  - In **simple regression**, there is only one independent variable. The formula for simple regression is $\boldsymbol{y=b_0+b_1x_1}$.
  - In **multiple regression**, there are two or more independent variables. Multiple regression simply extends simple regression $\boldsymbol{y=b_0+b_1x_1+b_2x_2+ \ldots b_nx_n}$.
  - Regression answers one or more of these questions:
    . What is the association between x and y?
    . How can changes in y be explained by changes in x?
    . What are the functional relationships between y and x?
  - Beware of false relationships! Correlation and regression can be used to "prove" that fire trucks cause house fires (if there is a house fire, there are likely fire trucks).

B. **Non-parametric** is used when the data are arranged in a skewed or other non-normal pattern. There is little use for this in planning, but a few points are in order.

- A **Positive Skew** indicates the value for mean is higher than the value for median. The "hump" for this distribution is to the left. It is sometimes called a Right Skew.
- A **Negative Skew** indicates the value for mean is lower than the value for median. The "hump" for this distribution is to the right. It is sometimes called a Left Skew.
- **Chi-Square** (x^2) tests for a relationship between two nominal or ordinal based variables as well as the joint probabilities between the two variables.
  - The formula is $x^2 = \sum_i \sum_j \frac{(O_{ij}-E_{ij})^2}{E_{ij}}$

POPULATION PROJECTIONS

Population projections are conducted based on historical and present conditions of the study area and can also be done between study areas as a comparison. First, some terms:

- **Estimates** are calculated for current population levels
- **Projections** are calculated for future population levels
- **Forecasts** are subjective and apply only to selected projections
- **Migration** is the movement of people into and out of a given study area.
- The **Birth Rate** is the total number of babies born per 1000 females in their childbearing years (typically 15-40).
- The **Death Rate** is the total number of deaths per 1000 people in the total population.
- The **Migration Rate** is divided into two subcategories, and is used to measure the number of people in the total population that are moving in or out of the study area.
  - In-Migration measures the total number of people coming in.
  - Out-Migration measures the total number of people leaving.
  - The Migration Rate is calculated by subtracting out-migration from in-migration. If the result is positive there is a net in-migration. If the result is negative, there is a net out- migration. The rate itself reflects total net migrants per 1000 people in population.

1. Historical Extrapolation is a basic method of projecting or estimating a population. This method assumes that past trends will continue into the future. As with any extrapolation, projecting too far into the future will result in erroneous conclusions. Historical extrapolation comes in several flavors (formulas are given, though most use computers now):
   - **Linear** projections assume that the population change will continue at the same numeric increase over the life of the projection. The formula for linear projections is $y=a+bx$. The result is a straight line on the graph.
   - **Geometric** projections assume the rate of change remains constant., resulting in a curved line. The formula is $y=ab^x$
   - **Exponential** projections assume that the population change will change exponentially over the life of the projection. The formula is $y=ae^{bx}$. The result is a curved line on the graph.
   - **Modified Exponential** projections assume that the population change will change exponentially over the life of the projection, but the assumption is subject to an absolute cap on the change. The formula is $y=c+ab^x$. The result is again a curved line, but the upper or lower limit modifies the line into an azimuth.
   - **Gombertz** projections are modified exponential projections on steroids. It is used to project a change in direction over time. Formula: $Y_c = ca\ ^\wedge(b^x)$
   - **Polynomial** projections are calculated $y=a+bx+cx^2+dx^3+ \ldots \alpha x^n$
2. The **Ratio Method** compares the study area (i.e. a City) to a larger known entity (i.e. a State). The method is good for point in time comparisons as well as comparing relative changes over time.
3. **Cohort Component (aka Cohort Survival)** population projections are commonly used to predict what the population will be for a given area in the future. The projection is based on past trends and data. They are heavily dependent on the birth rate, death rate, and migration rate (see terms above), and give an easily interpreted visual picture of the distribution of the population. On the following page are examples of "population pyramids."
   - The first, of the United States shows a stable population. The trend line along the edges is near vertical on both sides.
   - The Bangladesh example (middle) shows a growing population. This country will see

enormous population growth in the coming decades. The trend lines for the outer edges, if drawn, would form a triangle pointing upward (hence the "pyramid" in the name). This pyramid is typical of third-world countries.

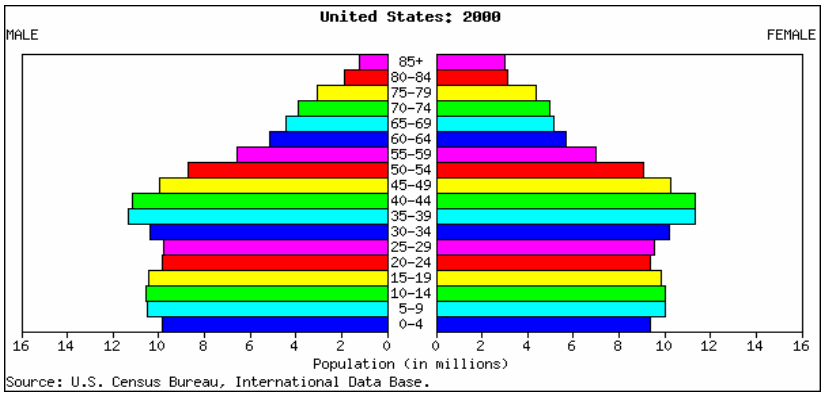
- The example on the bottom, of Germany, is typical of many first-world countries and represents a declining population. The trend lines along the edges form a triangle pointing down.
- It is difficult to conduct descriptive statistics on these data because each cohort represents a range of data for which the original distribution is unknown. Researchers fall into this trap often. For example, if the 0-5 year cohort shows 10,000 people, how are they distributed across the five years? 2,000 people each year? Perhaps they are all four years old (and the school superintendent is sweating). These two extremes help make the point. Be sure you know the limitations and work-arounds before attempting to do a statistical analysis on this type of data.
- A trick to making pyramids in a spreadsheet program is to multiply male data by –1. (Male data is on the left; female on the right. Just remember: Women are always right.)
- Calculating the **rate of change** for each cohort, each gender, or the overall population can be done with this formula: $r=(x_{t+1}-x_t)/x_t$
- To calculate the **annual growth rate** given only decennial data, convert using this formula: $g=[(v_n/v_0)^{1/t}]-1$, where v_0 is the population in the first year, v_n is the population in the final year, and t is the total number of years to be covered.
- The cohort component "supreme equation" is:

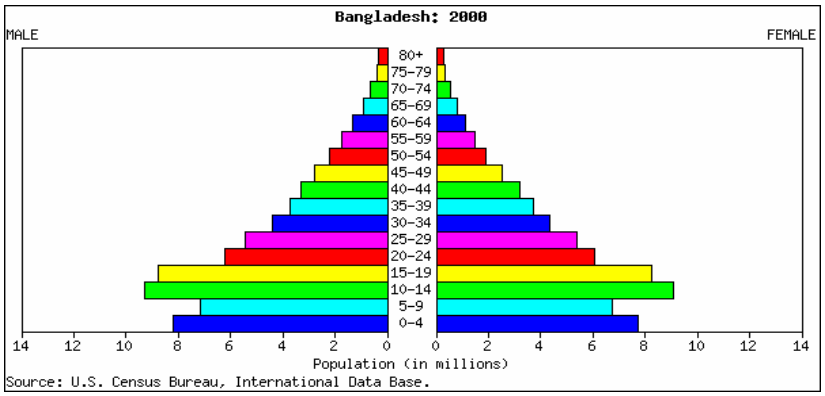
  $POP_{t+1}=POP_t+BIRTHS-DEATHS+IN\text{-}MIGRATION-OUT\text{-}MIGRATION$
- The process, in a nutshell takes eight steps:
  - Get age-sex data
  - Acquire "vital records" data (birth and death rates)
  - Calculate survival rates.
  - Move the "survivors" into the next cohort

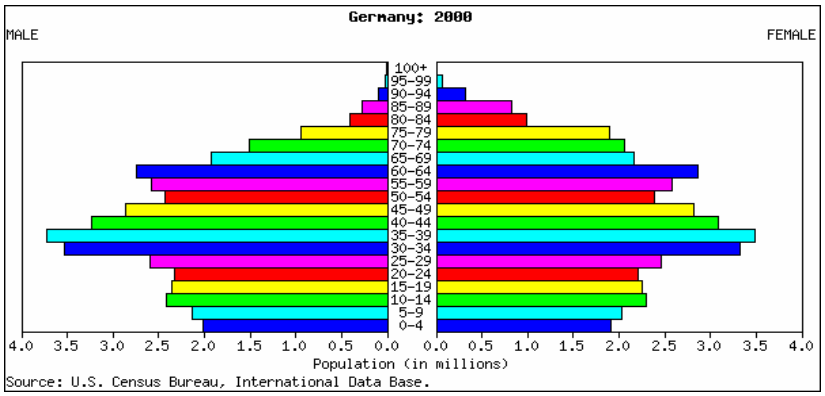
AGE	MALES	FEMALES	MALES	FEMALES
0 to 4	579	504		
5 to 9	753	666	574	504
10 to 14	694	747	753	661
15 to 19	662	589	694	747
20 to 24	347	316	642	589
25 to 29	384	414	347	316
30 to 34	530	578	384	414
35 to 39	676	753	530	578
40 to 44	808	868	671	753
45 to 49	846	917	793	863
50 to 54	823	834	841	907
55 to 59	627	657	808	834
60 to 64	458	462	593	637
65 to 69	404	418	448	452
70 to 74	358	422	366	418
75 to 79	215	308	324	402
80 to 84	134	192	178	252
85 plus	87	190	113	223

  - Calculate births
  - Allocate births to males/females
  - Project the population
  - Model migration as residual. (can only model – there is no age-specific migration data available)

4. The Distributed Housing Unit Method calculates population based on housing data as follows: $POPULATION_T = HOUSINGUNITS_T * OCCUPANCYRATE * PERSONSPERHOUSEHOLD$
   - This is the method the Census Bureau uses in its intra-decennial-census estimates.
   - Assumes that changes in the occupancy rate and persons per household numbers are constant throughout the subject county.
   - This method is less reliable in quickly changing communities and smaller communities.


United States: 2000
MALE
FEMALE
85+
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
16 14 12 10 8 6 4 2 0 0 2 4 6 8 10 12 14 16
Population (in millions)
Source: U.S. Census Bureau, International Data Base.


Bangladesh: 2000
MALE
FEMALE
80+
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
14 12 10 8 6 4 2 0 0 2 4 6 8 10 12 14
Population (in millions)
Source: U.S. Census Bureau, International Data Base.


Germany: 2000
MALE
FEMALE
100+
95-99
90-94
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0
Population (in millions)
Source: U.S. Census Bureau, International Data Base.

ECONOMIC BASE ANALYSES

1. Economic base analyses divide regional industries into Basic (export) and Non-basic (local) sectors and assumes that the basic sector drives the economy. Economic base analysis are easy and straightforward in calculating and interpreting. They can be used for both determining the impact of a change in the economy and for predicting future growth.
2. The assumption that the basic sector is the driving force in the economy is based on two observations (which are assumptions in themselves): 1) exports from a region give the region a competitive economic edge, and 2) exports produce a multiplier effect that is beneficial to the local economy.
3. There are a number of limitations to economic base analysis, however its user-friendliness and simple approach keep researchers coming back to it. It is this simple approach that produces the limitations:
   - The classification into basic and non-basic sectors leans heavily on assumptions discussed above as well as additional assumptions directly related to which industries are placed in which sector.
   - It does not account for demographics. People are what economy is really based on (if there were no people, there would be no economy). Ignoring demographics – especially migration trends – produces skewed results.
   - Economic base analyses have no spatial orientations. Therefore, as the size of the study area grows, the economic base declines. This is because the comparison is usually to the national economy. As the area grows, there is less area outside the study area, and as a result more industries go from basic to non-basic.
   - Most were developed before the "information age" and have difficulty overcoming the changes of the past thirty years (i.e. e-commerce, telecommuting, etc.)
   - They are almost exclusively demand-side economic models.
4. Economic data for these economic base models is available from several sources, including the US Census Bureau, the Department of Labor, and others. It is generally unreliable (and therefore is hard to find) below the county level. Keep the following in mind when utilizing economic data, particularly employment data:
   - Know the sources and assumptions behind the data.
   - The shift from the SIC system to the NAICS system has produced consternation for those seeking historical comparisons because the systems are not entirely compatible.
   - Economic data is sometimes seasonally adjusted – and sometimes not.
5. The export base can be defined in several ways. The direct approach can be used, however it is time and resource intensive and produces results similar to the more cost-effective indirect approaches.
   - The "Empirical Approach" assigns industries into basic and non-basic sectors through assumptions on each industry as well as good knowledge of the economy. For instance, most agriculture and manufacturing jobs were traditionally assumed to be basic, because the goods were sent away once produced.
   - The "Minimum Requirements Approach" utilizes an outside study area for reference and calibration. It assumes that a regional economy will completely meet its own local demand before any exports are made. Any employment

utilized above the meeting of local needs is considered to be in the basic sector. All others are non-basic by default.
- A third indirect method of defining economic base is the "Location Quotient" method, which is currently the most popular. It will be discussed separately, below.

6. With the base sector activity and the total economic activity of a study area in hand, the "Economic Base Multiplier" can be applied to measure local economic growth. The economic base multiplier can be based on employment, output, or income. It is calculated as follows: *EBM = TOTAL ECONOMIC ACTIVITY/BASIC SECTOR ACTIVITY*. A result of 3, for example, would mean that for every basic job, three non-basic jobs are needed/created in the economy (you can substitute "dollar" or "unit of output" for "job" here).

LOCATION QUOTIENT

1. Location Quotients are the most commonly used indirect method of defining the base sector of a study area. The data are relatively easy to find and the formula is simple to calculate. Moreover, it can be used on a variety of data types, such as employment (most common), income, output, and consumption. Location Quotients are used to tell us the amount of export-based [data type] in each industry.
2. Keep the limitations of economic base analysis in mind when using a location quotient. In addition, this particular method becomes more robust as the data become more detailed.
3. Location quotients are calculated for each individual industry, using this formula: $LQ_i = PERCENTLOCALEMPLOYMENT_i / PERCENTNATIONALEMPLOYMENT_i$
4. The location quotient centers on the number 1. A result of 1, means that the industry's local share of the economy is equivalent to the same industry's share of the national economy. A result less than one indicates that the local share is less compared to the national, and a result greater than one indicated the local share is greater than compared to the national – it is a basic sector industry.

SHIFT-SHARE ANALYSIS

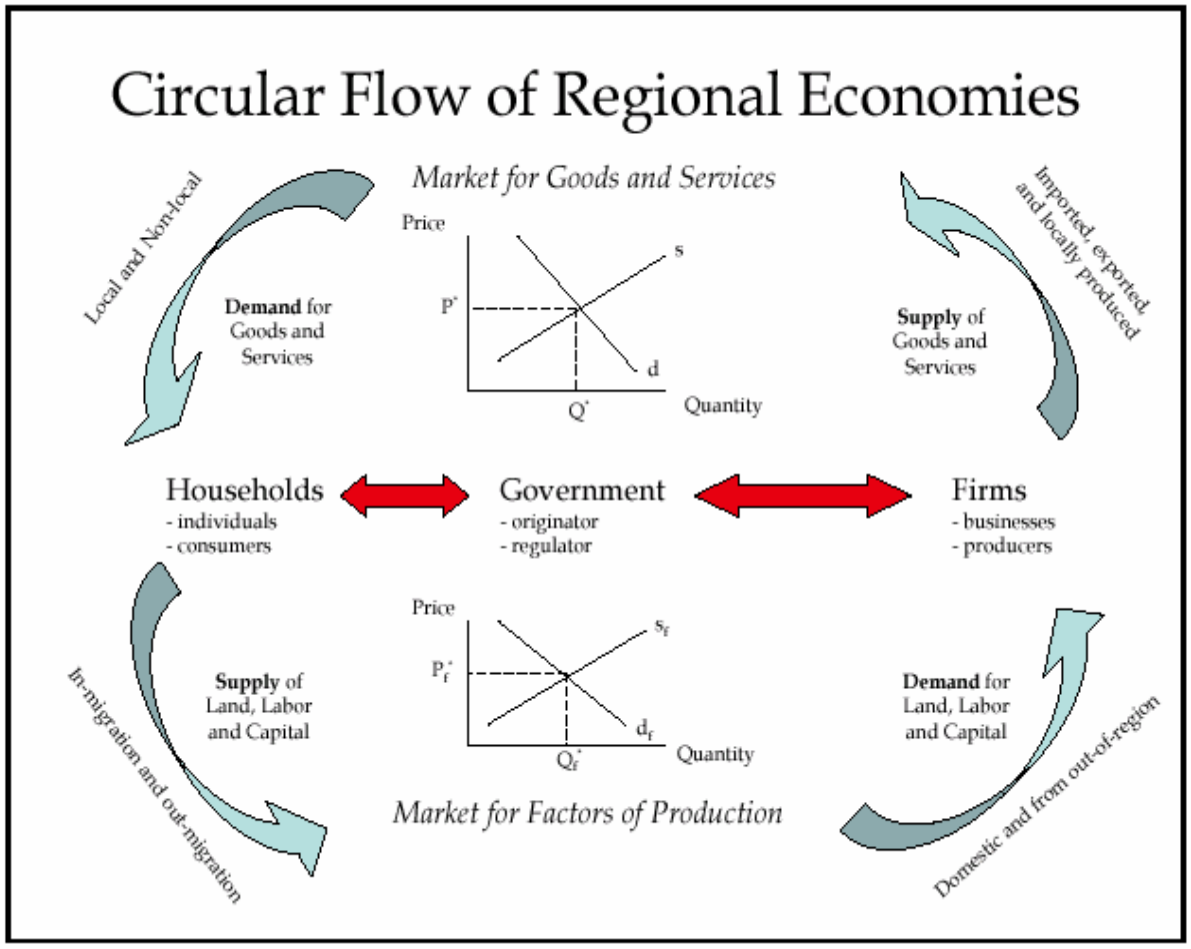
1. Shift-Share Analysis is a descriptive technique for analyzing sources of change in the regional economy by looking at national share, industry mix, and regional shift.
2. There are some who utilize this technique for forecasting, but this use is not universally accepted and could magnify some of the limitations of the technique.
3. National Share (NS) estimates the total employment in a given industry in the region if said industry in the region grows at the same rate as the nation. In a nutshell, it simply shows the extent to which the national economy grows or declines. The formula for national share (NS) is: $$\mathbf{NS}_{i,r} = \mathbf{E}_{i,r}^{t_0} * \frac{\mathbf{E}_n^{t_1}}{\mathbf{E}_n^{t_0}}$$
4. Industry Mix (IM) estimates relative change in employment in a given industry based on the difference in growth rates between said industry nationally and the entire national economy. The industry mix, when aggregated across all industries, shows

whether the mix of industries in your region are growing or declining relative to the national economy. The formula for industry mix (IM) is: $$\mathbf{IM}_{i,r} = \mathbf{E}_{i,r}^{t_0} * \left(\frac{\mathbf{E}_{i,n}^{t_1}}{\mathbf{E}_{i,n}^{t_0}} - \frac{\mathbf{E}_{n}^{t_1}}{\mathbf{E}_{n}^{t_0}}\right)$$

5. Regional Shift (RS) estimates change in employment in a given industry in the region based on the difference in growth rates between said industry in the region and the same industry nationally. Regional shift shows if your region is strong or lagging in the given industry relative to the nation. The formula for regional shift (RS) is: $$\mathbf{RS}_{i,r} = \mathbf{E}_{i,r}^{t_0} * \left(\frac{\mathbf{E}_{i,r}^{t_1}}{\mathbf{E}_{i,r}^{t_0}} - \frac{\mathbf{E}_{i,n}^{t_1}}{\mathbf{E}_{i,n}^{t_0}}\right)$$
6. To calculate shift-share, for a given data type (we'll use employment here), simply add the three variables together: $E_{i,r} = NS_{i,r} + IM_{i,r} + RS_{i,r}$
7. To calculate change (i.e. in employment), simply add the change factor in the appropriate variable in the formula.

INPUT-OUTPUT ECONOMIC ANALYSIS

1. Input-output analysis focuses on intermediate sales between an economy's sectors, or the circular flow of the economy (see graphic below). It is based on more of an accounting methodology than a theory (unlike economic base analysis).



2. Input-output analysis is similar to economic base analysis in that…
   - It is used both to study an economy's structure and to project that structure into the future.
   - It divides the involved economy's activity into groups. However, while the economic base technique divides economic activity into basic and non-basic groups, the input-output technique classifies economic actors as either (1) *primary suppliers* (they purchase no inputs for producing outputs – they are usually households, their output is usually labor, and they usually purchase only final goods), (2) *intermediate suppliers* (they sell their outputs to either intermediate or final purchasers), (3*) intermediate purchasers* (they buy outputs from others and use them as inputs to produce outputs – intermediate purchasers and intermediate suppliers are actually the same), and (4) *final purchasers* (they use their inputs as a final goods – i.e., they consume them). Note that primary suppliers are not necessarily also final purchasers.
3. Input-output analysis makes the following assumptions, some of which are dubious…
   - Economies of scale do not exist.
   - The available technology and the quality of labor do not change.
   - The inputs of each industry's production cannot be substituted.
   - Each industry produces only one bundle of goods (i.e., output).
   - Each industry's consumption of inputs stays constant.
   - There are no national imports or exports.
   - An economy's total output (i.e., the value of all sales in a limited time period) equals its total product (i.e., its final sales) plus its intermediate sales.
   - Final demand is outside of the economy being analyzed.
4. An input-output analysis is composed of three tables…
   - **The transactions table:** This table shows cash flows between intermediate economic sectors. Intermediate suppliers are listed on the y-axis (i.e., rows), and intermediate purchasers are listed on the x-axis (i.e., columns). Each row is summed to show the involved sector's total production (i.e., total outputs), and each column is summed to show the involved sector's total purchases (i.e., total inputs).
   - **The direct requirements table** (also called the "industry coefficients table" or the "technical coefficients table": This table is produced by dividing each cell in the transactions table by the sum of that cell's column. Thus, the sum of each column in the direct requirements table is one. If 0.05 was a number in a cell that belonged to manufacturing's row and agriculture's column, it would be interpreted as "0.05 of the money spent by the agricultural sector to produce one "unit" of output was used to buy intermediate goods (i.e., inputs) from the manufacturing sector."
   - **The total requirements table:** This table is produced by re-iterating the direct requirements table and summing the per dollar requirements of each economic sector (don't worry about this for the exam). Each sector is listed as a row on the y-axis (e.g., agriculture, manufacturing, households). On the x-axis, the following items are usually column headings: "sales to final purchasers," "sales as direct inputs" (one sub-column is provided for each economic sector, and one sub-column totals sales as direct inputs), "sales as indirect inputs" (one sub-column is provided for each economic sector, and one sub-column totals sales as indirect inputs), and "total sales."
5. Using input-output analysis…
   - An input-output analysis is typically a far worse "data hog" than a corresponding economic base analysis. Performing an input-output analysis is very difficult, costly, and time consuming.

- Even though most economists prefer input-output analysis to economic base analysis, input-output analyses sometimes don't produce significantly better results.
- Input-output analysis is most often used to project scenarios. After the three above tables have been completed for a particular economy, the thus created "model" is "shocked" with a hypothetical economic event – for instance, the opening of a new shopping center. As the involved economic sector changes (it grows, in this example), the resulting changes in its inputs and outputs ripple across the model – estimating the long-term effects of the hypothetical event on all of the particular economy's sectors.
- An input-output analysis can be similarly used to project a local economy's overall size and structure into the future. In this case, sector-specific growth rates that have been projected into the future for a larger "reference region" are used to "shock" the "model."

ECONOMETRIC APPROACHES TO ECONOMIC ANALYSIS

These approaches use regression to estimate the impacts of hypothetical economic events or to project economies into the future. The economic attribute being studied serves as the dependent (i.e., "y") variable. Calibrating the involved regression can be difficult.

Demographics

CENSUS 2000

1. The proper name of Census 2000 is "The 2000 Decennial Censuses of Population and Housing."
2. Census 2000 was performed as follows.
   - The 2000 Census Master Address File was created from the 1990 file, the U.S. Postal Service's Directory Sequence File, and (in MSAs) the Local Update of Census Addresses.
   - Each address on this file was related to its Census units and political jurisdictions.
   - A questionnaire was mailed to each of these addresses.
   - These questionnaires were collected. Enumerators were sent to those households that did not mail back their questionnaires (in 1990, only 65% of households did).
   - The information from the questionnaires and the enumerators was entered into a digital database.
   - This information was then tabulated and mapped.
   - The results of the Census are due on the President's desk by December 31, 2000.
3. About 17% of American households received the long form. Thus, the long form is a sample, and long form data must be tested via inferential statistics to insure accuracy.
4. About 83% of American households received the **short form**. The 2000 short form was the shortest since 1820. It addressed only seven subjects: the (1) names, (2) ages, (3) genders, (4) races, and (5) Hispanic ethnicities of the household's members; (6) the relationships between these members; and (7) whether the involved home was rented or owned by the household.
5. Census 2000 and the 1998 test census were the first to allow the respondents to select more than one race in describing themselves.
6. Census 2000 was the first to not consider cooking facilities and legal status as parts of the definition of the term "housing unit." This may cause an artificial rise in the number of housing units nationwide.
7. Census 2000 was the first to use Optical Mark and Intelligent Character Recognition

technology.

8. Census 2000 was the first to not use a post-Census review in estimating the undercount.
9. The following are some commonly used Census statistical units.
   - **Metropolitan Statistical Area (MSA)**: An area – consisting of one or more counties – that contains an urbanized core of over 50,000 residents
   - **Consolidated Metropolitan Statistical Area (CMSA)**: A regional MSA that is composed of two or more smaller, constituent MSAs – each of which is called a **Primary Metropolitan Statistical Area (PMSA)**
   - **Minor Civil Division (MCD)**: A Census unit that is only used in 29 states, and that usually (always in Pennsylvania) corresponds to a municipality. **Census County Divisions** are used in the 21 states that don't have MCDs.
   - **Census Tract**: A small Census unit with approximately 4,000 residents. Census tracts are only used in MSAs and in some other counties. **Block Numbering Areas** are used where census tracts are not.
   - **Block Groups**: These are groups of **blocks**, which are the smallest Census units.
   - **Tribal Designated Statistical Area**: A census unit drawn by tribes that do not have a recognized land area.
10. It has been estimated that the 1990 U.S. Census missed 1.6% of the total U.S. population, 4.4% of the African-American population, and 5% of the Hispanic-American population. Hispanic male renters were the most often missed.

POPULATION ESTIMATES

1. **Extrapolation techniques**: See notes under Analysis of Information, above.
2. **Cohort-Component Population Projections**: See notes under Analysis of Information.
3. **The Housing Unit Method**: Housing data from the last Census is used as a base. This data is then adjusted using subsequently issued building, demolition, and conversion permits for housing.
4. **The Ratio Correlation Method**: Multiple correlation/regression is used to relate population changes to typically four independent variables (which are typically automobile registrations, housing units, two-year average resident births, and jobs covered by unemployment insurance).
5. **The Component Method II**: This is a simplification of the cohort-component projection technique that estimates migration rates for those under 65 from elementary school enrollments.
6. **The Administrative Records Method**: This is a simplification of the cohort-component projection technique that estimates migration rates from the number of tax returns filed.
7. **The Comparative Method**: This method estimates an area's population based on the historical characteristics and trends of another, similar area.
8. **The Ratio (or Step-Down) Method**: An area's population is proportionally derived from projections of a larger region to which the area belongs.

POPULATION PROJECTIONS

Population projections are fully discussed under the "Analysis of Information" section above.

QUICK DEMOGRAPHIC FACTS

1. The 1920 Census was the first to show the urbanized population greater than the rural population. The US Congress refused to approve this Census for that reason.

2. The 1940 U.S. Census was the first to reveal a pattern of cities (i.e. the "city proper") losing ground to their suburbs.

THE PERCENTAGE OF THE AMERICAN POPULATION THAT WAS URBAN

YEAR	PERCENT
1900	40%
1920	50%
1960	70%
1980	74%
2000	81%

Information Systems

RELATIONAL DATABASES (RDBMS)

A relational database allows interaction between different tables, forms, queries, and reports within the database.

Elements are connected by use of a common identifier, sometimes called a database key

A table is similar to a spreadsheet. It includes fields (columns) and records (rows). A field is a specific type of information stored in the database, such as name, phone number, and email address. A record is unique for each entry in the database. An example of a record for the fields above would be Joe Smith, 555-1234, joesmith@inter.net.

A query is a question (or series of questions) posed to the database: Who is older than 18? What product is the bestseller in August? What is the average income of our customers? A query can also be used to create a unique table or combine fields from disparate tables into a single table.

A form is used to create a user-friendly interface to input information into a table. Forms are set up for use by end-users, such as data-entry clerks. Forms can also be used to limit the type of information input, and prevent access to certain fields, such as the common identifier.

A report is used to present information in the database in a logical and easy-to-read format. Forms and reports are often similar in set up and are often confused. Reports are used to output from the database; forms are used to input to the database.

A macro is used to automate tasks in a database or to make it more usable to the operator. Macros are often brand-specific and are not likely to be covered on the exam.

RDBMS are the basis for the other three information system types listed here

Relationships inside a RDBMS can be one-to-one, one-to-many, or many-to-one. The logic behind each is important when constructing the database. One-to-one means one record in

Table A will relate to exactly one record in Table B. One-to-many means that one record in Table A will relate to one or more records in Table B. Many-to-one means that many records in Table A can relate to exactly one record in Table B.

MANAGEMENT INFORMATION SYSTEMS (MIS)

MIS are large or multiple RDBMS used in decision-making. They usually include large amounts of information to support multiple "what if" scenarios as well as daily grind operations. For example, MIS functions for line staff might include data entry and output for building permit information, violations and complaints, and fees collected. Staff functions for the same database would be analysis of growth areas, fiscal responsibility, and areas prone to crime or blight.

SPATIAL DATABASES (SDB)

A spatial database is a RDBMS or MIS that has mapping capabilities (and sometimes basic spatial query capabilities) attached. SDBs are primarily centered on data entered into tables and queries, but do not have the geographic analysis capabilities found in a GIS. A spatial database is often confused for a GIS due to the mapping interface, however the SDB is merely coloring in a previously made map using the underlying tabular data as the source.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

A geographic information system is a combination of three elements. A GIS includes RDBMS as a basic component, and these are often large enough to qualify as MIS. The second element is a full cartographic element allowing the creation, alteration, and elimination of spatial features and/or mapwork. The third element is the ability to perform a full spectrum of spatial analysis on both the underlying spatial data elements as well as the underlying tabular data elements.

GIS spatial data can be vector or raster. Vector data are either points, lines, or polygons and are best used to represent specific features such as wellheads, roadways, and municipalities. Raster data are based on a grid overlaid on the target area and are best suited to continual datasets such as land cover, topography, temperature, and so forth.

A GIS user will generally rely on all three basic elements for input, analysis, and output of data in the system, but can also rely exclusively on one for the task at hand.

COMPUTER TERMS

Alphanumeric data: Data that consists of letters, numbers, or other characters which *are not* used in a mathematical formula

ASCII: (American Standard Code for Information Interchange) A code that represents 128 characters as numerals – including letters, numbers, "backspace," and "return"

Attribute: A piece of information that is tied to a specific object on a map

BPS: Bits Per Second

Byte: A group of binary bits used to represent a character… there are generally 8, 16, 32, or 64 bits in a byte

Cadastral map: A map that graphically defines the ownership of land… tax maps are cadastral

Domain name: The name of an internet site, such as "www.espn.com." The more specific parts of a domain name appear on its left side.

E-Mail: A foundation of internet communication whereby messages are sent from one computer to another.

Field: A component of a database record

Fixed length record: A database record with fields that are (1) always the same size, and (2) assigned uniform locations within the record based on their contents

FTP: Acronym for File Transfer Protocol, and a foundation of internet communication. This is the protocol that allows files to be retrieved from a remote computer on request.

Geocoding: The process of assigning X and Y coordinates to records in a database, so that the information in the records can be displayed as objects on a map

Geographic Information System: A GIS is a computerized mapping system that can (1) tell what exists at a specific location, (2) find locations that satisfy given requirements, (3) spot changes in an area over time, (4) identify patterns, and (5) model scenarios. GIS systems can be either raster or polygonal. Currently, there is a push towards developing *metadata* standards that will facilitate the sending and sharing of GIS data.

Host: On a network, a host is any computer that is a repository for services available to the other computers on the network

HTML: (Hyper Text Markup Language) A computer language used for laying out documents and hyperlinks on the Internet

HTTP: (Hyper Text Transport Protocol) The major protocol for moving files that contain hypertext across the Internet... HTTP is the most important protocol on the World Wide Web

Hypertext: Text with embedded code that allows a user to point at or click on a word, phrase, or other object to obtain further related information.

Importing: A process where one program loads a file as input that is the output of a second program

Integrated programs: Programs that combine separate functions such as word processing, spreadsheet, and database.

Internet: An acronym for Interconnected Network. The internet is the communications system whereby digital devices communicate. Dates back to at least the early 1970's.

IP: Internet Protocol. Nearly every modern digital communication occurs with this protocol.

IP Number: An identification number -- each machine on the internet has one (most have domain names too). An IP number is composed of four parts, separated by periods

JAVA: This is a programming environment designed by Sun Microsystems. In this environment, source code (in a machine-based computer language) is partially compiled into a generic language that is interpreted on the fly as it passes through the recipient computer's processor. JAVA resides in the computer network itself, and not in any one machine. This is vital to the operation of the Internet.

LINUX: An open operating system based on the UNIX operating system developed by students to make programming and computer operation more manageable.

Numeric data: Data that consists of characters which *are* used in a mathematical formula

Operating system: A collection of programs that control the overall operation of a computer... for example, Windows and UNIX

Peripheral equipment: Sub-units of a computer system besides the Central Processing Unit... they are often external, and are usually used to input, output, or store data

Random Access Memory: Memory in which the time to store or retrieve data is not affected by the previous bit of data handled. Abbreviated RAM

Read Only Memory: Memory affixed in the computer containing basic operations for the startup and very basic operation of the system. Abbreviated ROM

Record: A group of data fields

Relational database: A database that allows data to be retrieved or edited based on set relationships among the involved data and their locations

Telnet: One of the foundational pillars of internet communication, it allows remote access to a distant computer from a local machine utilizing Internet infrastructure.

TIGER: (Topologically Integrated Geographical Encoding and Referencing) A street network file, with X and Y coordinates, used by the U.S. Census. It is sometimes used as a municipal GIS base.

UNIX: An operating system designed to be used by several users at the same time… Internet servers often use UNIX

Variable length record: A database record with fields that are (1) not always the same size, or (2) not assigned uniform locations within the record based on their contents

URL: (Uniform Resource Locator) A standard manner of giving domain names or Internet resource addresses

Web server: A machine that feeds requested documents and media to local computers

World Wide Web: The internet interface used by most PC-based internet users. Often abbreviated WWW and called "The Web." Note that it is not a synonym for "Internet."

Impact Analyses

Net Present Value

1. The net present value formula is used to show the net monetary value of a project, discounted to present value. So, if the net present value of a proposed convention center will be greater than zero, then the monetary benefits of the convention center will outweigh its monetary costs.
2. $NPV = t((Bt - Ct)/(1 + r)^{t})$, where t = the number of years in the project's lifespan, Bt = the monetary benefits, Ct = the monetary costs, and r = the interest rate (for discounting purposes).
3. **Internal Rate of Return:** This analysis technique uses a variation of the net present value formula. A project's net present value formula is set to zero, and the interest variable ("*r*") is left blank. If the resulting interest variable is greater than the available market interest rate, then the project should be considered.

Benefit-Cost Analysis

1. Benefit-Cost Analysis is used both to determine the net monetary value of a project and to weigh the net monetary values of alternative, competing projects. Like net present value, its close cousin, Benefit-Cost Analysis discounts to present value.
2. The $BCR = NPV/t(Ct/(1 + r)^{t})$. If this ratio results in a number greater than one, then the monetary benefits of the project outweigh its monetary costs. If project "x" earns a higher "benefit/cost ratio" than project "y," then project "x" has a superior net monetary value. Note that this ratio can be manipulated by hiding some costs in the numerator as a "net annual benefit."
3. Benefit-Cost analysis can only address impacts that are quantifiable in terms of money. Furthermore, it can obviously only address known impacts. Thus, it tends to ignore

secondary impacts.

4. The results of a benefit-cost analysis and the net present value formula can conflict over the same project.
5. Alternatives to benefit-cost analysis include...
   - **The Total Cost of a Project Over its Lifetime and The Annualized Cost of a Project:** These two costs can be used to compare two or more projects that will provide identical benefits. However, if the benefits of the alternative projects are not identical, then cost benefit analysis must be used.
   - **Planning Balance Sheets:** A planning balance sheet is actually an evaluation matrix, with competing projects forming the rows and evaluation criteria forming the columns. With a little creativity, a planning balance sheet can evaluate economic, social, and environmental criteria – on both a short-term and a long-term basis – that are difficult to quantify in terms of money, and thus, hard to include in cost benefit analyses.
   - **Goals Achievement Matrix:** A goals achievement matrix is only a simple variation of a planning balance sheet. The various socioeconomic groups that the competing projects could cost or benefit form the table's columns, instead of the evaluation criteria found in planning balance sheets.

COST EFFECTIVENESS ANALYSIS

1. 1. Cost effectiveness analysis (or CEA) is usually used to compare two competing projects that will provide roughly the same benefits. However, it is more complex than merely comparing the *total* or *annualized* costs of the projects over their lifetimes (see the previous page).
2. Like cost benefit analysis, CEA discounts costs to present value.
3. CEA is based on a simple ratio: e/c. The "e" is a composite measure of effectiveness that can consider direct impacts, secondary impacts, and negatives – such as the traffic congestion that comes with economic growth. Note that metrics can be used to control for both the differences in measurement units and the relative importances among variables. The "c" addresses monetary costs.
4. **Equivalent Uniform Annual Cost Analysis (EUAC) and Equivalent Uniform Annual Benefit Analysis (EUAB):** These two techniques are close relatives of CEA. EUAC is a more complex form of comparing the a*nnualized costs* of two or more competing projects with roughly identical benefits (see the previous page). On the other hand, EUAB compares the benefits of two or more competing projects with roughly the same costs. EUAC and EUAB both address costs at their present values and allow alternatives with different lifespans and cost/benefit streams to be compared equally.

FISCAL IMPACT ANALYSIS

1. Some of the study materials refer to fiscal impact analysis as "cost-revenue analysis."
2. In general, fiscal impact analysis is used to estimate the costs and revenues that a proposed development will bring to an area's governments and schools.
3. *The Practice of Local Government Planning* lists six types of fiscal impact analyses (on page 468), each of which is differentiated by (1) the method that it uses to estimate costs, (2) the particular type of development that it studies, and (3) whether it focuses on average costs or marginal costs.
4. All six types of fiscal impact analysis estimate the revenues that will be earned by a proposed development in a similar manner. Note that revenues for utility services and

building permits are typically ignored, since they are usually user charges and just cover the costs of operation.

- For proposed residential development, per capita school district revenues are calculated by dividing all school non-tax revenues and tax revenues (except for real property tax revenues and earned income tax revenues) by the current number of residents in the school district.
- For proposed residential development, per capita municipal government revenues are calculated by dividing all municipal non-tax revenues and tax revenues (except for real property tax revenues, earned income tax revenues, and state liquid fuels tax revenues) by the current number of residents in the municipality.
- The per capita school district and per capita municipal government revenues are then applied to the expected number of residents in the new development.
- The increase in real property tax revenues due to the proposed development is calculated using information provided by the developer, the school district's millage rate, and the municipality's millage rate.
- For proposed residential development, the increase in earned income tax revenues is calculated using information provided by the developer, statewide average household income per unit multipliers, the school district's earned income tax rate, and the municipality's earned income tax rate.
- For proposed commercial or industrial development, the increase in wage taxes is calculated using the developer's employment and wage estimations as well as the wage tax rates of the school district and the municipality.
- The increase in liquid fuels tax revenues is calculated using the expected increase in residents and road mileage due to the proposed development (if any).
- The increase in federal and state grant-in-aid program funding to the municipality and the school district due to the proposed development is calculated using the rules of the program at hand.
- The above items are then totaled to show the total increased revenues due to the new development.

5. **The Per Capita Multiplier Method:** Of the six types of fiscal impact analyses listed in *The Practice of Local Government Planning,* the per capita multiplier method is by far the most commonly used. It is used for estimating the *average costs* of a proposed *residential* development. Its typical steps are summarized below...
   - First, the number of school-aged residents and the total number of residents expected to reside in the new development are calculated using statewide per unit multipliers.
   - The per pupil school district spending rate is applied to the expected number of school-aged residents in the new development.
   - The per resident municipal spending for roads, police services, fire protection, government administration, and all other services is applied to the expected total number of residents in the new development on a category by category basis.
   - The above items are then totaled to show the total increased costs due to the new development.
   - The simple per capita multiplier technique summarized above could be made more sophisticated by detailing the types of residences included in the new development and applying specific multipliers to each. For instance, townhouses generally house fewer school-aged children than single-family detached dwellings do. Senior apartments often require less police services than college student apartments do.
   - Note that the simple per capita multiplier technique summarized above assumes that the

proposed development will not necessitate major infrastructure construction projects (e.g., the school district will not have to build a new school to handle the increase in students). More sophisticated versions of this technique can deal with such complications.

6. Of the six types of fiscal impact analyses listed in *The Practice of Local Government Planning,* the following three – like the per capita multiplier method – are used for estimating the *average costs* of a proposed *residential* development…
   - **The Case Study Method:** The characteristics of the proposed development are shown to various municipal and school district officials, who collectively estimate a range of possible future costs to serve the development.
   - **The Service Standard Method:** This method, which is similar to the per capita multiplier approach, focuses on the manpower requirements needed to service the proposed development – using specific service categories.
   - **The Comparable City Method:** This method, which is rarely used, estimates the costs of the proposed development using information from other municipalities who have experienced similar developments.
7. Of the six types of fiscal impact analyses listed by *The Practice of Local Government Planning,* the following two are used for estimating the costs of a proposed *commercial or industrial* development…
   - **The Proportional Valuation Method:** This method is used to estimate the *average costs* of a proposed non-residential development. It assigns a proportion of the municipality's costs to the proposed development based on that development's real property valuation in comparison to that of the community as a whole.
   - **The Employment Anticipation Method:** This method is used to estimate the *marginal costs* of a proposed non-residential development. It is based on the assumption that a municipality's costs in serving a facility are related to that facility's total number of employees.
8. There are several critiques of fiscal impact analysis…
   - Fiscal impact analyses usually consider only direct, monetary impacts on the pubic sector. Indirect or non-quantifiable impacts are often ignored – as are impacts on the private sector.
   - Fiscal impact analyses often focus exclusively on *current* dollar costs.
   - Fiscal impact analyses usually ignore the costs and revenues imposed on county, state, or federal governments.
   - For better or worse, these analyses can force developers to change their site plan. A single-family detached subdivision that would overload the local school system may be manipulated into shifting towards townhouses or senior apartments.
   - The result of a fiscal impact analysis is often dependent on the community in which it is performed. The same moderate-income residential development may receive a negative result in a high-income municipality and a positive result in a low-income municipality. This may lead to ethical and legal problems with fair housing.

Functional Topics

Natural Resources and Environmental Quality

IMPORTANT ENVIRONMENTAL PLANNING BOOKS

- *Man and Nature* (Marsh, 1864): Marsh presents an argument for environmental land use planning.
- *Arid Region of the United States* (Powell, 1878): Powell puts Marsh's ideas into practice and introduces the concept of "land capacity."
- *Rural Planning and Development* (Thomas Adams, 1917): Adams argues for agricultural preservation, subdivision ordinances, and land suitability analyses in Canada.
- *Natural Principles of Land Use* (Graham, 1944): Graham establishes several ecologically-based rural land classifications and develops the relationship between environmentalism and land use planning.
- *Design with Nature* (Ian L. McHarg, 1969): McHarg establishes an influential model for environmental land use planning (it involves the use of overlays… see the *cartographic approach* to *environmental impact analysis* below), further develops the concept of land suitability analysis, creates an ecologically-based design process, and foreshadows modern environmental policy.

THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

1. §101 sets NEPA's basic substantive policy. "It is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy," to avoid environmental degradation, preserve "historic, cultural, and natural" resources, and promote "the widest range of beneficial uses of the environment without undesirable and unintended consequences… *to the fullest extent possible."* Thus, NEPA's substantive requirements are somewhat subjective and flexible.
2. However, NEPA's procedural requirements are somewhat rigid. Furthermore, the *"fullest extent possible"* language sets a fairly high standard for procedural reviews in federal courts. Each federal agency or department must consider the effects of its actions on the environment (see *Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission*, 449 F.2d 1109 [1971]). For each involved action, §102(2)(C) requires that a "detailed statement" be prepared that describes (1) the environmental impacts, (2) the environmental costs which might be avoided, and (3) alternative measures which might alter the cost-benefit equation.
3. NEPA and its accompanying case law require the filing of an *environmental impact statement* (EIS) for a proposed federal action only when that action is "major" and has a "significant environmental impact." An *environmental assessment* is performed to determine if a particular action requires an EIS. An EIS, itself, must include…
   - A description of current conditions
   - An identification of alternative means that would accomplish the action's objectives
   - An enumeration of each alternative's environmental impacts
   - An description of the method used to determine the preferred alternative (i.e., the proposed action itself)
   - A detailed listing of the proposed action's environmental impacts
   - A list of possible mitigations

4. For some proposed federal actions with "significant environmental" impacts (e.g., some housing projects), NEPA and its accompanying case law require a *social impact assessment* (SIA). SIA models include *ATOM 3* and *BOOM 1*. SIA usually involves the following…
   - Employment, demographic, and migration projections
   - Estimations of housing and governmental service needs
   - Fiscal impact analyses (FIAs)
   - Identifying mitigation measures based on the proceeding
5. If the *environmental assessment* for a proposed federal action finds that an EIS is not required (i.e. the action will not have a "significant environmental impact"), then a *Finding Of No Significant Impact* (FONSI) must be filed.

THE NATIONAL FLOOD INSURANCE ACT OF 1968

In providing insurance against America's most costly type of natural disaster, this law necessitated the creation of flood insurance rate maps. These maps usually show both 500-year and 100-year floodplains

THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976

This law regulates the transportation, treatment, storage, and disposal of solid and toxic wastes.

THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, & LIABILITY ACT OF 1980 (A/K/A CERCLA OR SUPERFUND)

1. This law established the Superfund using taxes on the chemical and petroleum industries (87% of the involved money) as well as federal and state appropriations.
2. The Superfund is used to address toxic contamination sites. The following two types of actions are possible…
   - **Remedial actions**: Such actions provide permanent solutions. They often involve cleanup.
   - **Removal actions**: Such actions do not provide permanent solutions. Removal actions include fencing off the involved site, relocating nearby residents, and providing drinking water where wells have been contaminated.
3. There are over 20,000 Superfund sites.

THE CLEAN AIR ACT OF 1963

1. This law was reenacted and amended in 1970, 1977, and 1990.
2. In its modern form, the Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to (1) establish air quality control regions across the country, and (2) set ambient standards for each region (these are called National Ambient Air Quality Standards, or NAAQS). State governments then make and enforce effluent regulations that will allow the NAAQS to be achieved. These regulations are contained in a State Improvement Plan (SIP).
3. In "non-attainment" and "maintenance" air quality control regions, transportation plans and programs that are financed wholly or partially with federal money are required to be consistent with the involved state's SIP. This requirement was established by the Clean Air Act Amendments of 1990.
4. "Marginal," "serious," and "severe and extreme" are different types of non-attainment areas under the Clear Air Act Amendments of 1990.

THE FEDERAL WATER POLLUTION CONTROL ACT OF 1972

1. This law was reenacted and amended in both 1977 and 1987. In 1977, its name was changed to the "Clean Water Act."
2. The 1972 law established the National Pollutant Discharge Elimination System (NPDES). This system requires all point source discharges to acquire and maintain a permit. These permits are issued by the EPA and states with EPA approved programs.
3. The NPDES permits are used to enforce both ambient and effluent water quality standards set by the EPA.
4. The Clean Water Act authorizes the use of land use controls to minimize non-point source water pollution.
5. §404 of this law protects wetlands with the authority of the U.S. Army Corps of Engineers.

THE NATIONAL COASTAL ZONE MANAGEMENT ACT OF 1972

This law established a voluntary program for coastal states. In order to be eligible for financial assistance, each involved state had to develop a coastal zone plan based on an inventory of coastal areas that required special protection. Then, the state had to implement this plan by adopting relevant land use controls.

SUSTAINABILITY AND STEWARDSHIP

1. The concept of sustainability involves social equity, economic prosperity, and environmental integrity. More importantly, it favors the minimization of resource use over the maximization of consumption. Although this has implications in several planning fields, it most directly speaks to land use planning.
2. Sustainability has roots in the following books...
   - *The Population Bomb* (Paul Ehrlich, 1968): Ehrlich predicts that humanity's expanding population and consumption will shortly exhaust the Earth's resources.
   - *The Limits of Growth* (The Club of Rome, 1972): This book states that Ehrlich's prediction will come true within a century.
   - *Steady State Economics* (Herman Daly, 1977): Daly endorses the minimization of production and consumption (as opposed to the maximization). He then explores the mechanics of an economy based on this concept.
3. The United Nations addressed sustainability through the Brundtland Commission (1987), the Rio Earth Summit (1992... note that this summit produced the document *Agenda 21*), and the Habitat II Conference in Istanbul (1996).

WELLHEAD PROTECTION ORDINANCES

1. These ordinances usually (1) define three zones around a wellhead, and (2) regulate activities within those zones so that the threat of aquifer contamination is minimized.
2. The three zones that are usually addressed in wellhead protection ordinances are as follows...
   - **Primary Recharge Area**: Water in this area flows directly into the well's aquifer.
   - **Secondary Recharge Area**: Water in this area flows directly into the well's primary recharge area.
   - **Tertiary Recharge Area**: Water in this area flows into the well's primary recharge area over a longer period of time.
3. The geographic locations of these zones are usually the most legally vulnerable part of a wellhead protection ordinance.

Land Use

ZONING ORDINANCES

1. A zoning ordinance (1) divides a municipality into zoning districts, and (2) imposes different land use controls on each of these districts – specifying the permitted uses of land and buildings, the acceptable intensities and densities, and the allowable building bulks (e.g., heights, setbacks, etc…). A zoning ordinance may also delegate certain roles to the municipality's governing body, planning commission, zoning hearing board, zoning enforcement officer, and staff.
2. The following is a brief history of zoning.
   - The legal authority of American cities to regulate land use was generally weakened after the Revolution.
   - In 1867, the City of San Francisco enacted the first ordinance in the United States that could be classified as zoning. This ordinance merely addressed the location of obnoxious uses.
   - In 1909, Los Angeles became the first municipality to apply zoning to undeveloped land.
   - In 1916, New York City enacted the first modern, "comprehensive" zoning ordinance: that is, it was the first zoning ordinance to contain land use, density, **and** building bulk controls. Note that the United States Supreme Court had previously upheld land use controls in *Hadacheck v. Sebastian* and building bulk/density controls in *Welch v. Swasey* and *Eubank v. City of Richmond* (see the planning law notes).
   - However, the United States Supreme Court did not uphold a modern, "comprehensive" zoning ordinance in its entirety until the 1926 case *Village of Euclid v. Ambler Reality Co.* (see the planning law notes). The court had apparently decided to strike down Euclid's ordinance when Alfred Bettman filed an amicus curiae brief on behalf of the Ohio Planning Conference. Bettman's brief apparently changed the court's mind.
   - • In 1961, Jane Jacobs's book *The Death and Life of Great American Cities* initiated a movement towards mixed-use zoning districts.
3. A **Euclidean zoning** ordinance simply lists the land uses permitted in each zoning district. On the other hand, a **performance zoning** ordinance sets so-called *"performance standards"* for each zoning district. These standards are either minimum requirements or maximum limits for use characteristics (e.g., the allowable amounts of smoke, odor, noise, heat, vibration, glare, traffic generation, and visual impacts). Any land use that meets a particular zoning district's performance standards is then permitted in that district.
   - • Performance zoning precisely defines what the involved community wants as an end result. However, it leaves developers with a choice in the means to that end. It automatically allows mixed use districts, and instead focuses on the impacts of development.
   - • Lane Kendig's 1980 book *Performance Zoning* is the bible of performance zoning.
   - • A pure performance zoning ordinance requires a significant amount of technical skills and equipment for enforcement. Thus, such ordinances are beyond the means of most municipalities.
   - • Nevertheless, many municipalities incorporate performance standards into traditional Euclidian zoning ordinances, subdivision/land development ordinances, and building codes. Performance standards are particularly useful in defining and regulating light industries, heavy industries, and buffers.
4. Euclidean zoning ordinances may use either an **exclusive classification system** or a **pyramid classification system**. The former lists the permitted land uses of each zoning

district separately. The latter sometimes makes all of the permitted uses of one district automatically permitted in a second district.

5. Many courts have defined **spot zoning** as a small "spot" of one zoning district (e.g., "commercial") in the middle of a second, larger zoning district (e.g., "residential"). Many courts have struck down spot zoning on the grounds that the "spot" was inconsistent with the larger neighborhood's character. However, spot zoning should be defined in reference to the involved comprehensive plan – which may permit such "spots" in some circumstances (e.g., a neighborhood commercial district).
6. **Inclusionary zoning** requires residential developers to include affordable housing in their developments.
7. In many states, zoning is the only legal basis for architectural or design controls.
8. The federal government is immune from local zoning ordinances if they will interfere with federal functions.
9. Zoning floodplains and wetlands is difficult because they often "move" – either naturally or in response to development elsewhere.
10. Note that a maximum density requirement of four dwelling units per acre is not the same as a minimum lot size requirement of a quarter-acre – because of potential clustering.
11. A municipality's zoning procedures (for official determinations, official decisions, public meetings, public hearings, and public notices) are subject to the constitutional requirements for **procedural due process**. "The basic meaning of due process is fairly simple: an individual whose rights are being determined or directly affected by a governmental action ought to be notified of that action and to be given the opportunity for a fair hearing before an impartial tribunal." Regarding zoning, procedural due process requirements have four basic impacts.
    - The public notice procedure should be effective, and should follow any state mandates.
    - The involved tribunal (e.g., the zoning hearing board) should be impartial.
    - Hearings must be fair both to the applicant and to those who are opposed to the application.
    - Determinations and decisions should be based on explicit findings of fact – as well as on any involved evidence and testimony.
12. A municipality's zoning regulations are also subject to the constitutional requirements for **substantive due process** – that is, the regulations must be rationally related to promoting the general welfare, and they cannot be arbitrary.

SUBDIVISION AND LAND DEVELOPMENT ORDINANCES

1. Subdivision and land development ordinances regulate the subdivision of lots and the design of major developments. In doing so, they tend to control the platting and recording of the newly created lots – as well as the provision and maintenance of any involved easements, open spaces, and physical infrastructure.
2. In 1913, New Jersey became the first state to institute the mandatory referral of subdivision plats. This was the beginning of modern subdivision controls.[26]
3. For the AICP Exam, familiarize yourself with the design standards recommended on pages 210-215 and 236-249 of *The Practice of Local Government Planning* (1988 edition).
4. The typical steps that municipalities follow in reviewing a proposed subdivision or land development under a subdivision and land development ordinance are as follows.
    - **Pre-application conferences**: In these meetings, the municipality's code enforcement staff familiarizes the developer with the local development regulations. Any potential

problems that the proposed subdivision may cause to either public infrastructure systems or other developments are identified. Relatively few details should be expected of the developer at this stage. The overall goal is to help the developer avoid any costly redesigns later.

- **Preliminary plat review**: At this step, the developer submits a preliminary plat of his or her proposed subdivision for review and approval by the municipality's code enforcement staff, governing body, and/or planning commission. The submitted plat is usually approved, approved with conditions, or denied. Note that the approval of a preliminary plat usually implies that a similar final plat will also be approved (it also sometimes implies that any subsequent zoning changes will be irrelevant). Involved school districts and/or sewer/water authorities may additionally review the preliminary plat as a courtesy. Note that to call a map submitted at this stage "preliminary" is somewhat misleading, since most of the subdivision's major characteristics are already somewhat fixed.
- **Final plat review**: The developer then submits a final plat of his or her proposed subdivision for review and approval by the municipality's governing body and/or planning commission. The construction, operation, and maintenance of any public or semi-public improvements or dedications should be thoroughly investigated at this time.

5. An approved final plat typically exhibits the following certifications.
   - A certificate of approval from the plat approval agency (e.g., the municipality's governing body or planning commission)
   - A certificate of accuracy and mapping by the involved surveyor
   - A certificate of ownership and dedication
   - A certificate of registration by the recorder of deeds
6. Most subdivision and land development ordinances require an approved final plat to be registered with the recorder of deeds within a month or two. This prevents the developer from delaying the reassessment of his or her land as building lots.
7. In any design review process, the following items are necessary.
   - Efficient, early interaction between the developer and the municipality
   - Clearly defined standards that the municipality's staff agrees on, supports, and consistently enforces

EXACTIONS

1. "The questions of who will finance subdivision improvements and community facilities and how financing and maintenance will be handled are fundamental to subdivision regulation. Most jurisdictions now expect subdividers to provide certain public improvements at their own expense. These 'exactions' may take the form of requirements for the dedication of land, the construction or installation of infrastructural improvements, or the payment of fees to finance these improvements (e.g., fees in lieu of dedication, impact fees)." Thus, **three kinds of exactions** are commonly used in subdivision regulations. Each of these will be discussed separately below.
2. **Improvements and dedications of land**: The most common form of a subdivision exaction is a requirement that the developer provide certain infrastructural improvements to serve the land being developed (e.g., public streets, utility lines, drainage systems, sidewalks, bus shelters, open spaces, etc…). Occasionally, these improvements are required on lands that the developer does not own or control.
   - If the required improvements are to be made available for public use or are to be connected to a public system, the municipality usually (1) will require the dedication

(i.e., donation) of the land so improved to the municipality, and (2) will accept this dedication only after the improvements have been completed and inspected. This dedication may involve a fee simple title, an easement, or some other property interest.

- In some instances, a municipality may require a developer to provide an improvement that is clearly designed to serve a larger population than that expected in the subdivision. In such cases, the municipality should partially reimburse the developer for these "oversized" improvements.
- Requiring developers to provide infrastructural improvements and to dedicate lands can be justified on a special assessment basis (i.e., those who will most benefit from the improvements and dedications pay for them).
- However, requirements for improvements and dedications of land are often too coarse for capital improvements programming. The full cost of many major public improvements (e.g., arterial roads) cannot be honestly assigned solely to one subdivision. Many public improvements cannot be built in stages as different subdivisions are developed over time (e.g., arterial roads). For some public improvements (e.g., parks), a large areawide facility may be superior to several smaller ones – each in its own subdivision. Thus, requirements for improvements and dedications of land developed into the next kind of subdivision exaction…

3. **Fees in lieu of dedication**: This form of subdivision exaction either allows or requires the developer to pay a fee in lieu of the improvements or dedications that would have otherwise been obligatory. Payment is usually made prior to and as a condition of final plat approval. In order to satisfy constitutional tests, the required fees are typically placed in accounts earmarked both by purpose (e.g., parks, schools) and by the geographic area in which they were collected.
4. **Impact fees**: This form of subdivision exaction is similar in concept and in function to fees in lieu of dedication. However, impact fees do not have to be directly tied to any requirements for improvements or dedications of land. Furthermore, impact fees can be more easily applied to off-site improvements.
   - Note that impact fees are usually collected when building permits are issued – and not prior to final plat approval.
   - Impact fees are a systematic, comprehensive method of funding the capital facilities required by a series of new developments. An impact fee system is typically developed and operated as follows.
     1. An estimate is made of the public improvements that will be required in a municipality over a specific planning period (usually 20 to 25 years). The extent to which these improvements will be funded through impact fees is then determined.
     2. The appropriate distribution of these costs is determined on the basis of the costs of each facility that are attributable to, and that should be equitably borne by, both new and existing developments in each service area. These costs are then allocated among the various development sectors: residential, commercial, and industrial.
     3. A series of formulas is used to allocate the appropriate portion of costs to each proposed development. For example, the costs of a street improvement project may be allocated on the basis of the number of trips generated by each involved development.
     4. Once collected, the impact fees must be placed into an account earmarked both by purpose (e.g., parks, schools) and by the geographic area in which they were collected. When the account reaches an appropriate level, the involved public improvement is constructed.

5. Note that some forms of exactions are not authorized by statute or by case law in some states (e.g., Pennsylvania). Furthermore, note that all exactions are subject to the legal precedents discussed in the planning law notes.

PERFORMANCE GUARANTEES OR BONDS

1. As was noted above, the most common form of a subdivision exaction is a requirement that the developer provide certain infrastructural improvements to serve the land being developed (e.g., public streets, utility lines, drainage systems, sidewalks, bus shelters, open spaces, etc…). Generally, the developer may not begin to construct these improvements until the preliminary plat is approved. Often, final plat approval is withheld until these improvements are constructed and the municipality has inspected and approved them.
2. However, many municipalities allow the developer to construct the required improvements after final plat approval. In such a situation, the developer is usually required to post a financial guarantee or bond that the municipality will release after the improvements have been inspected and approved.
3. For staged developments, the municipality may withhold a stage's final plat approval until the improvements required for a previous phase have been inspected and approved. This eliminates the need for any guarantees or bonds. However, these so-called "sequential approvals" often do not lend themselves to large-scale improvements – such as a wastewater treatment plant. In such situations, a hybrid approach must be used.
4. Some municipalities insure that the required improvements will be built to their standards after final plat approval by withholding the involved building permits until the improvements are inspected and approved. This also avoids the use of guarantees or bonds.
5. Performance guarantees or bonds come in the following forms.
   - The developer may obtain a performance bond from a surety company.
   - The developer may obtain an irrevocable letter of credit from a lender (this is often preferred by smaller developers, as performance bonds are costly).
   - The developer may place cash in an escrow account held in trust by the municipality or a local financial institution.
   - The developer may escrow his or her personal property.
   - The developer, the developer's lender, and the municipality may enter into a three-party subdivision improvement agreement.
6. Declaring a default and taking the responsibility for completing the required improvements can be costly for the involved municipality. Surety companies rarely allow a performance bond to be called without putting up resistance. Furthermore, the added costs of inflation, administration, and damage remediation are rarely reflected in the bond's original amount.

LAND USE KNOWLEDGE BASE

1. Randall Arendt's book *Rural by Design* argues for, among other things…[33]
   - The inclusion and proper design of open space in developments
   - The reclamation of commercial strips
   - Land conservation trusts
   - The elimination of cul-de-sac designs
   - The use of small turnarounds, non-circular turning loops, or hammerheads where cul-de-sacs are necessary
2. A higher **"R-rating"** for a home means more insulation.

3. The following items address proposals for **casinos**.
   - • In order to maximize local growth opportunities, casinos should be located in existing commercial areas.
   - • If more than 50% of the casino's market is local, the casino will drain the local economy.
   - • Casinos most often harm local retailing businesses.
   - • The frequently given base multiplier of 1.35 for casinos is usually a bit high.
   - • Most casino jobs do not pay very well.
   - • Most municipalities, in themselves, have profited from local casino developments.
4. Areas with higher **coefficients of runoff** drain faster. Dense urban commercial districts have the highest coefficients of runoff.
5. Surfaces with higher **albedos** reflect more of the sun's energy. For instance, snow has an albedo of 0.9, while asphalt has an albedo of 0.05.
6. The table on the next page shows some features of "neighborhood," "community," and "regional" shopping centers. This table was just pieced together – so it may be somewhat subjective.

SHOPPING CENTER TYPES			
	Neighborhood	Community	Regional
Typical size	50,000 – 100,000 sq. ft.	100,000 – 300,000 sq. ft.	300,000 – 1,000,000 sq. ft.
Typical anchors	Grocery or drug store	Department or discount store	?
Typical population served	10,000	40,000 – 50,000	50,000 and up
Typical site acreage	2.5 – 5 acres	10 – 30 acres	50 acres and up
Typical travel times to the site	5 minutes	10 minutes	30 minutes

Infrastructure

WATER SYSTEMS

1. According to the 1979 edition of *The Practice of Local Government Planning*, water supply systems are planned to supply each citizen with between 100 and 200 gallons of water per day. However, fire flow and peak use requirements more precisely dictate the needed levels of supply.
2. For any environmental infrastructure system (e.g., water, sewerage, solid waste, etc...), three "design parameters" primarily dictate sizing requirements.
   - The ultimate extent of the service area
   - The ultimate population of the service area
   - The projected per capita service level requirements
3. For both water and sewerage systems, the average cost per service unit decreases as the system nears its capacity.
4. For both water and sewerage systems, small additions to the system's capacity are usually more costly per service unit than large additions. This tends to overpower the present value based drive to spend less now.

5. All water systems are maintained under pressure – most from a water tower or a hill mounted tank. Thus, water lines usually do not have to follow topography as closely as sewers do. Furthermore, water lines can usually deliver greater quantities without requiring pipe size increases than sewers.
6. A "gridiron" water distribution system tends to be superior to a "branching" (or "dead end") distribution system because a gridiron system (1) has less stagnation points, and (2) supplies water to each customer from more than one direction.
7. Water systems generally do not ignite sprawl as badly as sewerage systems do.
8. According to the 1979 "Green Bible," the water supplied in American cities of over 25,000 people is distributed as follows.
   - 43% goes to residential uses
   - 25% goes to industrial uses
   - 19% goes to commercial uses
   - 13% goes to public and other uses
9. According to the 1979 "Green Bible," public water supplies should be extended to an area when…
   - It is no longer possible to provide both on-site water supply and on-site sewage disposal
   - There is a danger of sewage contaminating groundwater supplies
   - Proper firefighting requires hydrants
10. According to the 1979 "Green Bible," most municipal water sources are surface water. A "draft" source draws water from a flowing body of water – such as a river or a natural pond.
11. *The Safe Drinking Water Act of 1974* first charged the U.S. Environmental Protection Agency (EPA) with setting primary drinking water requirements.
12. Traditionally, water purification facilities were either one – or a combination – of the following.
    - Filtration plants
    - Deferrization and demanganization plants
    - Softening plants

SEWERAGE SYSTEMS

1. According to the 1979 edition of *The Practice of Local Government Planning*, sewerage systems are often planned to remove roughly 100 gallons of wastewater per citizen per day.
2. The following are relevant definitions.
   - **Sewage**: Sewage is the actual wastewater flow.
   - **Sewerage**: Sewerage refers to the system of sewers and treatment facilities.
   - **Sewer**: A sewer is a pipe used to carry wastewater.
3. Sewers are classified as follows.
   - **House connections**: These are sometimes referred to as house laterals.
   - **Laterals**: House connections empty into these.
   - **Mains**: Mains connect laterals to trunks.
   - **Trunks**: Trunks connect mains to interceptors.
   - **Interceptors**: Interceptors connect trunks to wastewater treatment plants.
   - **Sewer outfalls**: These transport the treated wastewater to the final receiving body of water.
4. Unlike water lines, most sewers are not maintained under pressure. Sewers are usually more practical and inexpensive when they use gravity instead of pressurization. Thus, sewerage systems tend to follow watershed boundaries more than municipal boundaries.

5. A sewerage system should be extended into an area when on-lot septic systems are threatening public health. Most states do not allow on-lot septic systems on lots smaller than one acre.
6. Sewerage systems, water supply systems, and highways are the three essential elements of suburbanization and land development in the United States.
7. The design flow for a sewerage system as a whole is generally calculated as the service area's population times its gallons per capita per day use (GPCD) times its peaking factor.
8. According to the 1979 "Green Bible," there are three main types of sewage treatment.
   - **Primary treatment**: Primary treatment refers to the removal of from 30% to 35% of the organic pollutants and up to 50% of the suspended solids. Generally, it involves screening, skimming, and settling.
   - **Secondary treatment**: Secondary treatment removes from 80% to 90% of the organic pollutants and over 80% of the suspended solids. Generally, it involves settling and at least one biological process – such as activated sludge, stabilization ponds, or trickling filters.
   - **Tertiary treatment**: Tertiary treatment removes additional organic pollutants, specific organic compounds, and/or specific inorganic ions. Phosphates and nitrates are common focuses of tertiary treatment.
9. The required capacity of a wastewater treatment plant is calculated by multiplying the service area's expected population by that population's *average daily production*. Commercial and industrial service needs are calculated on an ad hoc basis, and then added to this total.
10. The required capacity of a sewer is calculated on a *peak production* basis. Note that a sewerage system's peaks tend to level out as the system grows.

COMMUNICATIONS SYSTEMS

1. Traditional Telephone
   - Initially, telephone systems were "core-based" – expanding outward from population centers. This is still evident today with a study of local calling areas – outlying areas oftentimes can call into a population center as a local call, but those calling the opposite direction must pay for the call.
   - People in core communities generally do not utilize or subscribe to long distance service.
   - The US telephone network is divided into area codes and exchanges. The area codes were large contiguous (and until the 1990s exclusive) geographic areas within a state. Sparsely populated states had just one area code. Pennsylvania had four such area codes. Until the 1990s, all area codes had a second digit of "0" or "1."
   - Exchanges focused on the core communities and are three-digit numeric assignments each capable of handling up to 10,000 individual numbers. Until the 1990s no exchange assignment had a second digit of "0" or "1." When an exchange reaches 10,000 numbers, a new exchange is added.
   - Exchanges were often reflections of the companies or areas being served. The famous "Pennsylvania 6-5000" Would today be dialed 736-5000.
   - With the advent of wireless and internet communications, the telephone network is fading into history. Several of the larger communications companies are actively removing customers from the traditional telephone and onto these newer communication systems. Some industry insiders expect traditional telephones to be completely gone from the scene by 2020.

2. Wireless Communications
   - "The term **wireless communications** refers to a family of communication devices that can send and receive messages instantly – by voice in the case of cellular telephones or alphanumerically in the case of pagers.
   - A specific form of wireless voice communication is the **Personal Communications Service (PCS)**. PCS is similar to a cellular phone but operates at different radio frequencies and requires twice as many communications facilities." (Covington, Page 8)
   - "Wireless communications typically require **three components**: a **device** (telephone, pager, or portable computer), a **cell site/radio link**, and a **switching office**. Every major metropolitan area has one or more switching offices, where calls from cell sites are processed. The calls are then sent out through the telephone system… When a call is made, the device seeks out a radio link, also known as a cell site… Most cell sites include one or more antennas, a structure to support them, and a building to house radio and computer equipment. Cell sites can be located on the roofs of buildings, on billboards, atop wooden utility poles, and on metal poles. Lattice towers are considered a last resort." (Covington, Page 8)
   - **The Federal Telecommunications Act of 1996** (Public Law No. 104-104) set up most of the framework in which local governments address wireless communications facilities.
     - Section 253(a) forbids state and local legislation that "may prohibit or have the effect of prohibiting… any telecommunications service." However, Section 253(c) states that "Nothing in this section affects the authority of a state or local government to manage the public rights-of-way or to require fair and reasonable compensation from telecommunications providers, on a competitively neutral and nondiscriminatory basis, for use of public rights of way."
     - Thus, municipalities may regulate and require permits for the siting, design, construction, and modification of wireless communications facilities – provided that these facilities are not entirely excluded from the jurisdiction. However, municipalities may not regulate these facilities on the basis of the environmental effects of radio frequencies that have already been approved by the Federal Communications Commission (FCC). Furthermore, municipal regulatory schemes must be impartial and reasonably fast. Permit denials must be in writing and "be supported by substantial evidence."
   - Ringwood, New Jersey, required all cell sites to be located on land owned or leased by the municipality. Medina, Washington, instituted a six-month moratorium on the issuance of cell site permits – which was upheld in federal court.
   - Many towns have used **wireless master plans** to (1) approve the areas where cell sites may be located, and (2) review individual site applications.
   - "Local legislation should also include provisions for **co-location** – the sharing of facilities (e.g., two or more cell sites sharing the same tower)… Local governments like the idea because it reduces site proliferation, and the industry likes it because construction and operating costs are reduced. There are some drawbacks, however. For one thing, co-location creates larger sites. The more carriers sharing a facility, the bigger (and potentially more intrusive) it will be… Wireless communications companies can share cell sites. They cannot, however, share the radio equipment that sends and receives calls and information. Should two carriers share a site, normally 10 feet of space must separate the antennas belonging to each company." (Covington, Pages 8 and 12)

- Municipalities can encourage or "require when practical" the "stealthing" of cell sites. Camouflaged tree poles, steeples, and architectural elements are all commonly used to minimize aesthetic impacts and to avoid ugly towers.
- Municipalities should review their zoning ordinances to make sure that they (1) do not exclude wireless communications facilities, and (2) do not permit such facilities everywhere under broad definitions such as "public utilities" and "telecommunications facilities."
- The Telecommunications Act of 1996 also permitted cable companies to offer local telephone services, permitted telephone companies to offer cable services, deregulated cable operators, and deregulated the wireless communications industry in general.

3. Broadcast Media
   - There are three forms of broadcast media: print, radio, and television.
   - The media are protected under several clauses of the US Constitution (speech, assembly, press, etc.)
   - Each form has at least three types of land use associated with it. The first is the production site. In TV and radio, these are called studios. For the print media, this would be the press site. The second land use is the point of broadcast. These take the form of towers and antennae for radio and TV, and the form of paper boxes and magazine sales racks for the print media. Finally, all media have offices to support the activities of the company and provide a place for executive and journalists to complete their work. All three land uses should be accounted for in a successful media market.
   - A good relationship with the local journalists can go a long way in supporting and furthering a planning program.
4. Internet/Broadband
   - The internet is a worldwide system of interconnected computers and computer networks for the basic purpose of file transmission.
   - The foundational functions of the internet are email, telnet, and FTP. All internet activity is functionally based on one or more of these three concepts.
   - The internet, through its various applications, is becoming the communication tool of choice for much of the world's population. This is due to its extreme versatility.
   - Unlike the telephone system, which is based on switching circuits, the internet is based on packet-switching. This means that instead of a single-purpose exclusive connection, the data is broken into parcels called packets and transmitted node-to-node over a network shared with other such packets. In any given file transfer it is possible that no two packets will travel the same route from origin to destination.
   - To the user, the internet works similar to the telephone system. The user's computer has a unique number assigned to it. To connect to another computer (or, site) the user enters that site's number along with the command as to what is needed at that site.
     - FTP umich.edu connect me to the file server the Univ. of Michigan
     - SMTP%"user@office.com" send mail to an account "user" at a company "office."
     - http://planning.org connect me to the site planning.org using http protocols
   - The world wide web appeared in the early 1990s, and its interface is quickly becoming the "face of the internet." Most web browsers are now capable of incorporating the non-web internet functions (i.e. FTP, telnet, email, archie, gopher, usenet, etc.)
   - The first successful packet-based network was activated on October 29, 1969.
   - The first TCP/IP network (modern internet) was activated January 1, 1983
   - The ARPANET-based internet was opened to commercial use in 1988, however a commercial interest had already developed a nationwide network since the early 1970s.

This interest merged into the internet by 1990.

SOLID WASTE COLLECTION AND DISPOSAL

1. According to the 1979 edition of *The Practice of Local Government Planning*, solid waste disposal systems are planned to remove and dispose of roughly 5.5 pounds of solid waste per person per day.
2. The choice of a disposal site usually generates more interest among citizens than any other part of a solid waste collection and disposal system. However, disposal costs are relatively minor compared to collection costs. Between 70% and 85% of a system's total costs are for collection labor.
3. Waste exchanges can help municipalities find buyers for recyclables. Metal, paper, and plastic are the hardest recycled materials to find buyers for.

Energy

Energy is the physical force which can manifest itself as heat, as mechanical work, as motion, and in the binding of matter by nuclear or chemical forces.

Conservation of Energy is the physical principle that energy can neither be destroyed nor created, but rather is merely changed from one form to another.

Energy Conservation is the careful stewardship of resources resulting in sparing use of energy and a reduction of pollution resulting from that use.

Hubbert Peak Theory postulates that for any given geographic area, the rate of petroleum production follows a bell curve. The "Peak" is the point in time when production reaches its maximum rate, after which the production rate will enter into a decline from which it will not recover. Often it is referred to in such terms as "Peak Oil" or "Peak Coal." Such peaks can only be positively identified in retrospect.

The **Energy Return on Energy Investment** (EROEI) is the amount of energy produced for the amount of energy expended to produce it. In the 1800s, 50 barrels of oil was produced for each one barrel-equivalent used in the production, for an EROEI of 50:1. Currently, the EROEI worldwide is between 5:1 and 1:1, depending on the field. When the ratio reaches 1:1, the energy gain is zero, and the production is no longer an energy source. For petroleum, the 1:1 ratio is reached long before actual supply is depleted.

In 2000, there were approximately 6 Yottajules (6,000,000,000,000,000,000,000,000 Jules) of energy remaining worldwide in nonrenewable sources. The current annual energy consumption is approximately 15 Terrawatts, which equates to about 0.5 Zetajules each year. Renewable resources could potentially provide nearly 4 Yottajules each year if developed.

PETROLEUM DEPENDENCE

US petroleum dependence is two-fold. First, the societal attitudes resulting from the massive highway programs of the late 20th Century have created an illusion of independence and freedom of mobility never before enjoyed in history. This continues into this century. Second, the US demand for low-cost, lightweight products has increased demand for plastics, which are

mostly petroleum-derived. A petroleum shortage would therefore not only affect our mobility, but also impact nearly 75% of the products and processes we use today.

Traditional oil fields are projected to reach "Peak Oil" between 2007 and 2015. This is making off-shore oil exploration more profitable and more appealing to both oil companies and consumers. It also raises environmental marine concerns.

COAL

Coal reserves are divided into two major types: anthracite (hard) and bituminous (soft).

Other types of coal include Peat, Lignite, and Graphite. Lignite is sometimes used in steam-electric generation.

Coal is used to generate just under half of the electricity consumed worldwide.

Coal is inefficient as a power generator because even the best plants can utilize only 30%-35% of the energy in coal. The rest is lost as heat. In practical terms, a single 100-watt lightbulb left burning for one full year would require about 1000 pounds of coal.

Coal seams exposed to rain cause acidification of the rain water because of the presence of pyrite (fools gold) along the seam. This acidification turns streams orange and creates an inhospitable environment for aquatic life.

In 2000, there was approximately one exagram (1,000,000,000,000,000 grams) of coal remaining worldwide. At current consumption, "Peak Coal" coal will occur sometime in the early twenty-third Century. If coal were mined at the highest levels seen (i.e. those of the early twentieth Century), "Peak Coal" would occur sometime in the mid twenty-second Century.

NATURAL GAS

Natural gas in the United States is used primarily for heating and cooking.

Natural gas is more difficult to process, store, and transport than other nonrenewable energy sources. Transoceanic lines are not economical. Gas is therefore not developed into a global market.

The largest gas fields are located off the coast of Qatar and off the coast of Iran.

"Peak Gas" in the North American market occurred in 2002 or 2003.

Natural gas is odorless. The scent commonly associated with it is injected during processing for safety/detection purposes.

RENEWABLE RESOURCES

The four common renewable resources are wind, the sun, water, and geothermal, and provide approximately 1/7 of the total world consumable energy.

1. **Wind** Power
   - The fastest growing sector of renewable resource-based energy production.
   - Because wind is not constant, the power output is not reliable. Technology has not developed an effective solution to this issue.
   - A typical turbine produces power approximately 25% of the time in any given year.
   - Turbines produce between 0.5 and 5 MW of power.
   - Power output increases exponentially with arithmetic increases in wind speed.
   - Wind turbines are criticized for their aesthetic impacts as well as newly documented issues of wildlife incompatibility (particularly bats and birds).
2. **Solar** Power

   Solar technology harnesses the power of the sun for energy

   Active solar systems utilize mechanics to focus on receiving and processing the maximum amount of solar energy

   Passive solar systems are generally done by building/structure design to receive and process solar energy.

   Direct solar technologies convert sunlight directly into power.

   Indirect solar technologies utilize several steps in converting sunlight into power.

   Albedo is a measure of how much light it reflects. The higher the number (decimals from 0-1), the more light there is reflected.

   Aesthetic concerns are present when solar "farms" are proposed, however the technology has advanced enough that solar can be integrated into building design for any individual project.

   Solar is limited by total number of sunny days annually and by latitude.
3. **Water** (Hydro) Power
   - Historically, hydropower was used for irrigation and mechanical operation (i.e. mills).
   - Inland hydropower generally involves a dammed stream where water from the reservoir is forced through turbines, thereby generating electricity.
   - Oceanic hydropower involves tidal power, whereby the flowing tides turn turbines placed in advantageous areas (high tidal differences, high flow). It can also take the form of wave power, a relatively new technology pioneered in Australia.
   - In rural areas, modern water wheels or turbines are installed in streams to produce power with little or no effect on aquatic life. This is called micro-hydropower.
   - Inland hydropower generally required dam construction which dislocates people and destroys natural habitat.
4. **Geothermal** Power
   - Geothermal power utilizes the natural convective heat of the earth to heat, cool, and produce power
   - Three methods are used to harness this power. Dry Steam Generation utilizes steam venting naturally to directly drive turbines. Flash Generation remove heated water from the ground and utilizes the resulting steam to turn the turbine. Binary Generation pumps the hot water through heat exchangers which boils another fluid that turns the turbine.
   - Leaders in geothermal development are Iceland and Australia.
   - It is possible to over-extract the energy and thereby temporarily deplete the supply at any given location.

Public Services

SCHOOLS

- Schools are divided into three basic levels: Primary (Elementary), Secondary (High School), and Tertiary (College/Trade).
- Most states require a ratio of building area or land area (or both) per student for the public schools.
- Schools are primarily controlled at the local level with states providing legislative oversight and fiscal aid. The federal government also provides fiscal aid that comes with regulatory strings attached.
- Education is compulsory throughout the United States.
- The percentage of dropouts has steadily declined 1970-2000. Dropout rates for blacks are generally twice that of whites; Hispanics are thrice that of whites.
- Enrollment rates have remained steady over the same time period.
- Public school expenditure rates (per pupil) for the last three decades of the 20th Century doubled (using constant dollars). In 2000, the average per-pupil cost was $8,000.
- Public schools educate 90% of the US children, private/parochial schools educate 8%, and homeschools 2%.
- College tuitions have nearly quadrupled from 1985-2005. Private institutions are generally 2.5-3 times more costly than public.
- Colleges present unique challenges to communities in housing the student population, dealing with expansion, and the various cultural amenities they provide

CULTURAL RESOURCES

- Cultural resources include facilities such as stadiums, theaters, museums, assembly halls, and houses of worship.
- Usually none of these provide direct financial benefit to the local government, but do provide innumerable indirect benefits to the community.
- Stadiums and large assembly halls (i.e. conference centers) are generally poor public investments, both fiscally and socially because the costs of construction and maintenance greatly outweigh all other benefits.
- Cultural resources do better when clustered together or are tied with a unique historical or culturally-significant event or landmark.
- Cultural resources also include elements like pocket parks, public art, and plazas.

PUBLIC SAFETY

1. Police and Guards
    - Statewide police services average about $25 per resident. Local police services average $210 per resident.
    - Not all law enforcement are assigned to respond to calls for help. On average, US police departments assign 2/3 of its sworn employees to respond to calls for help. This varies greatly depending on size of department and number of calls.
    - Foot and bicycle patrols offer many benefits in building community relations, knowing the constituency, and familiarization with the lay of the neighborhood.
    - Having a single patrolman on duty 24 hours a day 7 days a week requires a sworn staff of 6-8 patrolmen. This covers all hours, plus time off (sick, vacation, etc.). Another way of saying this is that for every officer on duty, a jurisdiction must hire 5-7 more. This does not account for part-time, special events, or times of increased coverage.

- Not all officers need fully-equipped emergency response vehicles. Some should be assigned to the after-the-fact-discovery-of-a-crime calls that are common, but are not emergencies. Others are investigative, and still others are community police.

2. Fire
   - Fire services are generally provided via paid professional fire departments or unpaid volunteer fire companies.
   - Fire departments are a division of the local government and are fully staffed and funded as a function of the local government.
   - Fire companies are usually independent organizations dependent on a number of sources and goodwill for funding.
   - Response time is generally better with fire departments, but quality of service is not dependent on professional or volunteer (quality of service is a function of training and experience, not paid or unpaid personnel).
   - Fire protection is generally best in wet hydrant areas. Other methods include dry hydrants, fire ponds, or stream pumping.
   - Street widths need to take into account fire truck width and length, and keep in mind turning around. Fire truck size should not be the only determinant of width, however.
3. Medical
   - Medical services in a community include the full range of health care providers (from family physician to hospital trauma center), and response services.
   - Response services are generally in the form of ambulances and frequently referred to as "Emergency Medical Services" (EMS).
   - The primary purpose of response services is to provide treatment to those in need of urgent medical care. If a satisfactory outcome cannot be attained in the field, transport to an appropriate facility occurs.
   - In addition to the traditional response service, EMS units commonly also undertake extraction, search, rescue, and dive rescue services.
   - In most states a trained paramedic is required to stop to render assistance in the event of an emergency.
   - Administrative methods for providing medical response services include government-based, integrated (into police or fire), voluntary, corporate (private), hospital-based, and an emerging method of comprehensive response where all personnel are trained in fire, medical, and peace officer functions. The last is generally undertaken by large institutions such as college campuses.
   - Basic medical care should generally be provided at a ratio of one physician for every 1000 population.
   - Hospital campuses and buildings must be designed with operational efficiency and sanitation paramount.
   - Hospital operational costs are increasing exponentially as a combination of labor, technology, and pharmacy have an impact.
   - Alternative models of healthcare are emerging, such as private (non-institutional) diagnostic centers, specialists, and even surgery centers become more popular.
4. Correctional Institutions
   - It is the goal of correctional institutes to rehabilitate inmates through strict scheduling and discipline, skills training, education, and (if needed) medical treatment.
   - Male and female prisoners are generally kept in separate facilities, although such separate facilities may be located in the same "campus."

- Types of institutions include penitentiaries, juvenile halls, military prisons, and psychiatric wards.
- The US inmate rate (prisoners per population) has tripled since 1982. The US rate in the highest of all nations worldwide. 2.2 million people are incarcerated in the US (2006).
- Alternative forms of corrections include halfway houses, group homes, house arrest, probation, parole, and fines.

HUMAN AND SOCIAL SERVICES

- Human and social services include the various welfare agencies, children services, family services, and elderly care.
- These services are generally funded and mandated at the federal or state level, but carried out on a local-regional or local level.
- Examples include hospice, visiting nurses, foster care, family counseling, WIC, food stamps, and various other programs.
- These programs are targeted to the poor and disadvantaged, or for those who suffer an unexpected cataclysmic event, such as a layoff.

Transportation

EARLY FEDERAL TRANSPORTATION INROADS

1. Basis in the United States Constitution
   - Transportation in and of itself is a right delegated to the States
   - The Commerce Clause delegates items related to commerce to the Federal Government
   - National defense is also a Federal right and responsibility
2. National Road
   - Federal project to open the Appalachian Frontier
   - Connected eastern population centers and the Ohio Valley via the Appalachian Mountains with a well-established and maintained roadway
   - Present day US-40 (mostly)
3. The Federal-Aid Highway Act of 1916 and the Federal Highway Act of 1921
   - These laws provided the basis for the federal highway program as it exists today. Before 1916, roads were mostly a concern of local governments.
   - The 1916 law required each state to create a DOT.
   - Both laws gave states the initiative in constructing roads, but gave the federal government a "review-and-approve" role when federal funds were involved.
4. Lincoln Highway
   - Response to the automobile, though based on established ways
   - First national coast-to-coast highway
   - Part of a larger system of "named" highways which formed the basis for the numbered route systems in place today.
   - Present day Route US-30 (mostly); many towns on the route still have a "Lincolnway" as the major thoroughfare
5. The Federal-Aid Highway Act of 1934

   A provision of this law said that states may use up to 1.5% of a highway project's federal construction funds for planning.

THE GOLDEN AGE OF HIGHWAYS

1. The Federal-Aid Highway Act of 1956
   - This act constituted the nation's largest public works project ever undertaken up to that time.
   - It extended the nation's planned road system to 41,000 miles.
   - This act launched the Interstate System of Defense Highways, and established the federal Highway Trust Fund to pay for the system's construction.
2. The Federal-Aid Highway Act of 1962
   - A provision of this law *required* states to use 1.5% of a highway project's federal construction funds for planning in urbanized areas of over 50,000 people.
   - The law fostered regional planning in urbanized areas of over 50,000 people by requiring the use of the "3-C" (i.e., comprehensive, coordinated, and continuing) transportation planning process. This process is usually composed of the following steps.
     - The region's current travel and system conditions are inventoried.
     - Demographic, economic, and land use projections are performed.
     - The region's future travel demands are estimated by using the following steps (which can be simplified using "sketch planning" methods).

       Trip Generation:

       Using current land use maps, future land use maps, and land use-specific trip generation rates, the number of trips that will be generated by each current and future land use is estimated.

       Trip Distribution:

       The destinations of the trips generated in the previous step are estimated – usually using gravity models.

       Modal Split:

       The mode that each of the above trips will use to get from its origin to its destination is estimated – usually using probit or logit models.

       Supply Analysis:

       Alternative means of meeting the region's future travel demands – as estimated above – are evaluated by studying the costs and benefits that each alternative will bring to various groups.

       Traffic Assignment Models

       Assign an actual route to each trip estimated above and are used to evaluate the relative efficiency of each alternative. Both existing and proposed infrastructures (i.e., "supply") are addressed, as are financing alternatives.
3. The Federal Highway Act of 1973

   Along with a new concern for environmental and social issues in transportation planning, the following items were created by this act.

   - **Metropolitan Planning Organizations:** These are policy bodies for transportation planning in metropolitan areas.
   - **Transportation Improvement Programs:** See the notes on ISTEA below.
   - **Transportation System Management (TSM):** TSM attempts to match an area's travel demands to its transportation infrastructure (i.e., its "supply") by extracting more efficiency and effectiveness from existing highway and transit systems. TSM measures include HOV lanes, park and ride facilities, and metered lights on freeway ramps.

THE INTERMODAL ERA

1. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)
   - ISTEA required MPOs and state DOTs to create an ongoing series of three-year "Transportation Improvement Programs" (TIPs). Each TIP was to (1) establish priorities among local projects using federal and other funds, and (2) identify funding sources for each involved project. Thus, the TIPs were to be financially constrained. This was intended to squelch questionable highway spending.
   - ISTEA also required MPOs and state DOTs to create a 20 year "Long Range Plan," upon which the TIPs were to be based. This framework was intended to shift the balance of power in deciding how federal highway funds would be spent from USDOT to MPOs and state DOTs.
   - ISTEA also required more public input than the previous federal highway funding system had provided.
   - The *Clean Air Act Amendments of 1990* required the United States Department of Transportation (USDOT) to restrict transportation funds to non-attainment air quality control regions. To get these funds, MPO's and state DOTs in these regions had to submit a TIP that included measures to reduce automobile emissions. The "carrot" to this "stick" was provided in ISTEA: $6 billion was authorized for congestion mitigation and air quality projects via the newly founded Congestion Mitigation and programs consists of three TIPs (each being four years long). Air Quality Improvement Program (CMAQ). CMAQ-funded projects included HOV lanes, ridesharing systems, and transit improvements.
   - ISTEA created the *Surface Transportation Program*, which provided $24 billion in "flexible funds" for the development of highway alternatives (e.g., transit, bikeways, and zoning changes that strategically increased densities). However, 10% of these funds had to be used for safety improvements, and 10% had to be used for aesthetic enhancements.
2. The Transportation Equity Act for the Twenty-First Century (TEA-21)
   - TEA-21 was largely a continuation of the policies established in ISTEA.
   - Under TEA-21, TIPs are to be regional, based on current demographic data, coordinated with local and regional planning for growth, environmentally conscious, and based on public involvement.
   - Overall, TEA-21 reduced the number of mandatory planning factors to be considered in preparing a TIP. It also streamlined the major investment study and environmental document preparation processes.
   - TEA-21 earmarked several transportation projects. However, those projects still had to be included in TIPs, and they were still subject to NEPA.
   - TEA-21 continued the CMAQ program.
   - TEA-21 established the "Transportation and Community and System Preservation Pilot Program" (TCSP) to fund projects that linked transportation infrastructure to land use patterns.
   - TEA-21 established the "Access to Jobs Program" to increase transit services *to* suburbs and to transport former welfare recipients to and from jobs. This was the so-called most important social goal of TEA-21.
   - TEA-21 stated that cuts in transportation spending could no longer be used for other federal programs.
   - TEA-21 represented a 54% decrease in funding for new highway construction.

3. **S**afe, **A**ccountable, **F**lexible, **E**fficient **T**ransportation **E**quity **A**ct: A **L**egacy for **U**sers
   - SAFETEA-LU was signed into law in 2005 and was the largest surface transportation allocation in US history to date.
   - Created the Highway Safety Improvement Program designed to keep up with repair and reconstruction of aging infrastructure
   - It balanced the federal allocation of transportation monies across the states and guaranteed that each state would receive back at least 90% of what its drivers paid into the highway trust fund.
   - It encouraged public-private partnerships in transportation and even entirely private projects and ownership of transportation facilities.
   - Opened up federally-funded highways to "road pricing" to combat congestion.

TRANSPORTATION STATISTICS

1. The Lancaster Pike, built in 1793, was the first "turnpike" in the US. It provided convenient surface transportation between Philadelphia and Lancaster.
2. Boston built the nation's first subway in 1897.
3. The first limited-access high-speed roadway was the Pennsylvania Turnpike, 10-01-1940
4. Peak hours make various transportation modes inefficient. This problem can be remedied by reducing peak demands, redirecting peak demands, expanding capacities (via transit, TSM, and new construction), and/or increasing vehicle occupancy rates.
5. The average vehicle occupancy rate in the United States is approximately 1.4 persons. However, this rate usually goes down during rush hours. Raising this rate to two persons per vehicle would reduce congestion more than tripling transit use.
6. **Paratransit** includes private/public carpooling and subscription bus/taxi services.
7. The **Level of Service (LOS)** of a highway link or a transit line is a "letter grade" assigned according to the numerical ratio of volume over capacity. Regarding highway links, "LOS A" means free flow, "LOS C" means stable flow, "LOS D" means unstable flow with long delays, "LOS E" means that the link is nearing its capacity, and "LOS F" means that the link is over its capacity.

A SAMPLE OF ROUGH TRIP GENERATION RATES	
single family detached home	9.1-10.2 trips per day
Duplex	7 trips per day
Apartment	6 trips per day
manufactured housing unit	5.5 trips per day

A SAMPLE OF ROUGH PARKING SPACE REQUIREMENTS	
residence	0.2-2 spaces per 1000 sq. ft. of gross floor area
shopping center	1-5 spaces per 1000 sq. ft. of gross floor area
office	0.5-3 spaces per 1000 sq. ft. of gross floor area
industrial facility	0.67-3.5 spaces per 1000 sq. ft. of gross floor area

NON-MOTORIZED TRANSPORTATION

1. Pedestrian
   - Level of service measurements for pedestrian traffic are the same as for vehicles, however the results are interpreted opposite. The more "feet on the sidewalk" the better the system is functioning.

- Pedestrian transportation needs to consider the natural – or logical – pathways that people will walk. Feet will take the shortest path even if a paved walkway lies within ten feet and the shortcut is a wet lawn.
- Walkways should be at least four feet wide. Five is preferable.
- Separation from street traffic is desired to enhance safety for the walker.

2. Bicycle
   - Bicycling is an environmentally-friendly and healthy alternative to local travel.
   - Parking for bicycles should be set at a level reflecting local need. If bicycling is a new concept for non-recreational travel, a ratio of one bicycle space for every ten motor vehicle spaces is appropriate, provided a minimum of two spaces regardless.
   - Bicycles should be provided separate facilities for parking and riding. If no separate lane is feasible, the cyclist uses the motor vehicle lane as any other vehicle.

MASS TRANSPORTATION

1. Intra-City (Transit)
   - Intra-city travel is any travel that begins and ends within the same urban area.
   - Mass transit fills a gap in the transit system by providing mobility to those people who cannot (physically or financially) afford a car or travel too far to walk or bike.
   - Mass transit includes on-demand services like dial-a-ride buses and taxis.
   - Bus systems are popular because they are flexible in routing and in responding to unexpected circumstances on the route.
   - Rail systems have the advantage of an exclusive right-of-way, pre-emptive passage (cars must wait for trains), and limited stops. However, if something blocks the rails, the system is crippled.
   - Transit systems need development and population density to be successful. Large cities and university towns are areas that effectively use mass transit.
2. Inter-City (Bus, Ship, Air, and Rail)
   - Inter-city travel is any travel that moves between two urban areas.
   - The most important distinction in inter-city travel is between business and personal travel, irregardless of passenger or freight.
   - Long term trends indicate an increase in air transport with corresponding declines in ship, bus, and rail.
   - Intercity travel has tripled since 1960, with three-quarters of the growth attributed to the automobile and the other quarter attributed to air transport. Other modes held their own during this period.
   - AMTRAK was established in 1971 in response to the railroads' collective desire to exit the passenger business.

Recreation

RECREATION PLANNING TERMS

- Leisure: Any portion of an individual's time that is not occupied by gainful employment or used in the pursuit of essential activities.
- Recreation: Any leisure-time activity that is pursued for its own sake.
- Park: Any public or private land that is set aside for aesthetic, educational, recreational, or cultural uses.
- Open Space: All land or water that is not covered by buildings. There are five functional

classifications of open space: (1) areas used for managed resource production, (2) areas used to maintain environmental and ecological balances, (3) areas used to protect the public health and safety, (4) areas used for community development and social welfare, and (5) areas used to shape the urban form.

RECREATION PLANS

1. The purpose of a recreation plan is to inventory, analyze, and project valid information that relates people (i.e., behavior), time (i.e., leisure), and activity (i.e., recreation) to space (i.e., resources) and a geographic area (i.e., a planning unit) – using criteria or measures that are sensitive to the changing physical character, social needs, and political priorities of a community.
2. A comprehensive plan typically provides the basis for a recreation plan, and thus, should probably be completed first. Of course, a recreation plan can be included in a comprehensive plan as an element.
3. A five-year time horizon is most appropriate for recreation plans in cities.
4. The prototypical recreation plan presented on page 288 of the 1979 edition of *The Practice of Local Government Planning* (i.e., "Green Bible") has eight parts…
   - An introduction that describes the plan's objectives, scope, legal authority, predecessors, and responsible agencies
   - An inventory of the relevant demographic, socioeconomic, behavioral, and regional conditions
   - An inventory and analysis of the existing recreational facilities and programs
   - An analysis of local demand and use patterns that considers budgetary constraints, various demographic groups, and **user preference/satisfaction**
   - A **needs assessment** with a **supply and demand analysis**
   - A formulation of goals, policies, and alternatives
   - An implementation program
   - An appendix
5. The 1979 "Green Bible" lists four approaches to **needs assessment** on page 290.
   - **The Resource Approach**: In this approach, existing physical and natural resources are used to determine the types and amounts of needed recreational opportunities. Demand is thus limited by the carrying capacities of the involved resources (i.e., the supply).
   - **The Activity Approach**: In this approach, past participation in selected activities is used to determine the recreational opportunities that should be provided in the future. Thus, supply is somewhat created by demand.
   - **The Economic Approach**: In this approach, the community's fiscal resources are used to determine the amount, type, and location of needed recreational opportunities. The demand for some opportunities is measured by pricing (i.e., user fees).
   - **The Behavioral Approach**: In this approach, surveys and various other citizen participation programs are used to determine the "time budgets" of individuals and broad socioeconomic groups. These budgets then identify the needed recreational opportunities.
6. **Supply and demand analysis** is used to relate existing and future recreational behavior (i.e., demand) to existing recreational opportunities (i.e., supply) so that the deficiencies in the current stock are identified. The 1979 "Green Bible" *briefly* mentions ten different approaches (on page 291): the innovative approach, the measures of effectiveness approach, the level of service approach, the needs-resources index approach, the recreation experience components concept, the population ratio method, the area percentage method,

the carrying capacity approach, the systems model approach, and the user resource planning method.

7. An analysis of **user preference/satisfaction** should address the following five items.
   - **Concepts of quality**: The user's resource directed desires (e.g., "I like to hike in the forest"), image directed desires (e.g., "I like to be seen jogging"), and leisure directed desires (e.g., "I want to consume my leisure time in a fun way") should be measured separately.
   - **Recreation activity classification**: The user's preferences should be aggregated into activity classifications. The interrelationships among these classifications – as well as their environmental impacts, space requirements, and support requirements – should then be analyzed. Most recreational activities can be grouped into the following classifications: physical recreation, social recreation, cognitive recreation, and environment-related recreation.
   - **Recreation space classification**: The user's preferences should be similarly aggregated into space classifications. Most recreational activities can be grouped into the following space classifications: home-oriented (90% of leisure time is spent in the home), neighborhood-oriented (these typically serve a population of 5,000, and are often associated with an elementary school), community-oriented (these typically serve a population of 20,000, and are often associated with a junior high/high school complex, shopping center, or community center), citywide-oriented (these typically serve a population of 100,000), and regional-oriented (these are typically very specialized and very large).
   - **Leisure behavior surveys**: Obviously, surveys must be performed to measure user preference/satisfaction, levels of participation, and latent demand. Both community-wide surveys and pre/post-construction surveys (for specific projects) are useful.
   - **Recreation measures of effectiveness**: In addition to surveys, quantifiable measures of effectiveness are useful to measuring user preference/satisfaction, identifying deficiencies in supply, defining a baseline for progress measurements, and budgeting. Commonly used measures include the amount of acreage in use, the amount of staff time in use, and public participation (by age-sex cohort).

Economic Development & Revitalization

THE ECONOMIC DEVELOPMENT PLANNING PROCESS

1. The 1988 edition of *The Practice of Local Government Planning* (i.e., the "Green Bible") summarizes the economic development planning process as follows.

   - Both public economic development agencies and private businesses "organize for planning."
   - Economic development opportunities are identified.
   - Action plans are developed.
   - These plans are implemented by both the public economic development agencies and the involved private businesses.

2. According to the "Green Bible," public economic development actions fall into one of two categories: (1) *business attraction and retention*, and (2) *real estate development.* Each of these categories will be discussed separately below.

BUSINESS ATTRACTION AND RETENTION ACTIVITIES

1. According to the "Green Bible," business attraction and retention activities should be based on an economic base analysis/projection, an input-output analysis/projection, or a similar study of the involved area's economy. The economy's growth potential should be assessed in terms of its structure, growth trends, major employers, business conditions, and demographics (i.e., its age structure, labor force, educational attainment, income, etc…). Local real estate market conditions should be analyzed as well.
2. According to the "Green Bible," the industries to be targeted in a business attraction effort are identified as follows.
   - A **"business location profile"** is prepared that identifies the area's strengths and weaknesses according to commonly used corporate site selection criteria.
   - On both a national and a regional scale, the growth rates (in terms of employment, investment, number of establishments, and value of shipments) of several industries are analyzed to determine who is looking to expand.
   - The production characteristics of each involved industry are compared to the area's "business location profile." Some industries require specific infrastructures, types of skilled labor, and so on. Some industries utilize only large-scale facilities that are too big for small economies. Some industries prefer to locate near established businesses that either supply them with inputs or are supplied by their outputs. Such characteristics must be identified.
   - Using the above analysis, local opportunities are identified and marketing plans are developed.
3. Business retention programs should be based on an inventory of existing businesses and regular meetings with those businesses.

REAL ESTATE DEVELOPMENT ACTIVITIES

1. According to the "Green Bible," public real estate development activities should begin with a **site and area assessment**. Each lot and building in the study area is inventoried. Land use patterns, occupancy rates, business health conditions, and parking characteristics are studied to determine whether favorable conditions exist for certain types of development.
2. Then, a **market analysis** is performed for the larger, regional area. Target markets, potential competitors, demands, market capture rates, niches, and market penetration rates are identified for each considered use and site. The demographic and economic trends that underlie these factors are also studied.
3. The **absorption potentials and attainable prices** for each considered use and site are then estimated.
4. **Preliminary use opportunities and concepts** are then developed for each considered site.
5. An **initial financial analysis** is performed to insure the feasibility of each considered concept.
6. A **development program** refines the physical configurations of each considered concept.
7. A **final feasibility and investment analysis** is performed to select the best concept, use, and site.
8. An **implementation action plan** is prepared and implemented to build, market, and manage the selected concept, use, and site.

INDUSTRIAL AND RESEARCH & DEVELOPMENT PARKS

1. **Industrial Parks**: These parks are most popular among "lighter" industries that wish to lease a site. According to the "Green Bible," industrial parks should have between 100 and 1,000 acres of land available – with good highway or rail access, all utilities in place, and either covenants or zoning to protect the atmosphere.
2. **Research & Development Parks**: To be successful, R&D parks usually have to be located either near a major university or in an area with extraordinarily good living conditions. There are two types of these parks.
   - "Science Parks" usually target the earliest stages of product development.
   - "Technology Parks" usually involve more production and manufacturing activities.

WORKFORCE ATTRACTION AND RETENTION

This is a relatively new concept in economic development. It is based on the desires of upcoming generations that place is more important than job. People younger than the so-called Boomer generation prefer to select a place to live and then find a job once they are there. To that end, economic development is looking to community design to create a sense of place and excitement to attract (and retain) this young workforce and therefore stable corporations. Corporations focus on the 20-35 year age group because they generally have the most time to give to the corporate cause.

THE NATIONAL MAIN STREET MODEL

This model involves (1) organizing the governments, residents, and business interests of a downtown district; (2) improving the district's design and appearance; (3) promoting the district through coordinated marketing; and (4) diversifying the district's economic structure. Special assessment districts and storefront improvement grants are often involved.

ECONOMIC DEVELOPMENT KNOWLEDGE BASE

1. An area's **"business climate"** is defined by variables such as its tax structures and levels, prevailing wages, degree of unionization, environmental regulations, educational funding, investment incentives, local banks and their attitudes towards financing, and so on.
2. An area's **"economic capacity"** is defined by variables such as its available infrastructure (e.g., roads, railroads, telecommunications networks, sewer lines), its research and development organizations (both corporate and university related), its public school systems, its local banks and the availability of equity capital, its incubators, and its work force (the size, age structure, and educational attainments of this force are all important).
3. The two sources of business financing are **equity** (owner investment capital) and **debt**. Public economic development programs usually address only the debt side of business financing.

URBAN RENEWAL

1. **The Federal Housing Act of 1949** created the federal urban renewal program. This program made federal funds available to "deteriorated" areas (initially) for slum clearance and redevelopment (to any use). Note that the involved municipalities were required to have comprehensive plans.
2. **The Federal Housing Act of 1954** expanded the effort begun in 1949. The following changes were made to the federal urban renewal program.
   - Areas that were *in the process* of deteriorating were eligible for renewal funds as well.

- For the first time, the program was officially referred to as "urban renewal."
- For the first time, federal funds were made available to re-house those displaced by urban renewal projects.
- For the first time, the involved municipalities were required to have zoning and subdivision ordinances.
- **Section 701** of this act authorized the federal government to provide 50% of the funding for the required comprehensive plans.
- The citizen participation component of the urban renewal program was greatly expanded.

3. The federal urban renewal program was based on a similar state program initiated by Pennsylvania in 1945. The "Golden Triangle Project" was begun under the **Pennsylvania Urban Redevelopment Act of 1945**.
4. The federal urban renewal program and the slum clearance projects that were associated with it often became controversial. In Pittsburgh and in many other cities, prosperous African-American neighborhoods were bulldozed and replaced with major public works or public housing projects.
5. Lessons learned from the urban renewal program include the following.
   - A renewal effort, in and of itself, can stabilize neighborhoods.
   - Slum clearance can create new slums elsewhere.
   - Governmental subsidies are no substitute for a strong economy.
   - Code enforcement is very important to preserving existing neighborhoods.

HOUSING AND URBAN DEVELOPMENT

1. Community Development Block Grant Program (CDBG)
   - The CDBG program is the longest continuously-operated program under the jurisdiction of the US Department of Housing and Urban Development. It is an annual entitlement grant program based on predetermined formulae for funding disbursements. There are nearly 1200 entitlement communities nationwide.
   - CDBG funds must be used to meet one of three national objectives:
     - Benefit low- and moderate-income persons
     - Prevent or eliminate slums and blight
     - Address community needs of urgency due to a serious and immediate threat
   - The program funds must be allocated as follows:
     - At least 70% must be allocated to help low- and moderate-income persons
     - No more than 30% may be used to prevent or eliminate slums and blight
     - No more than 15% may be used to support "public services"
     - No more than 20% may be used for program administration
2. HOME
   - This is the largest federal block grant designed exclusively to create affordable housing for low-income households. It is an annual entitlement grant program based on predetermined formulae for funding disbursements.
   - Recipients must match every dollar received through the program with 25¢ from nonfederal sources, including in-kind services and materials.
   - At least 15% of HOME funds must be marked for use by Community Housing Development Corporation.
   - HOME funds must be committed within two years, and spent within five years.

3. HOPE Programs
   - The purpose of the HOPE programs is to eradicate severely distressed housing by focusing on 1) physical improvements, 2) management improvements, and 3)social and community services to address resident needs. The program focuses on public housing.
   - HOPE can be used in conjunction with a Main Street Program to develop affordable housing along a revitalized thoroughfare
   - Uses of funds include capital costs of major rehabilitation, new construction, demolition, site acquisition, and program support for residents.
4. Consolidated Planning
   Consolidated plans are a federal approach to grant programming and assistance for the less fortunate. These plans focus on all entitlement grants offered to a community and serve as a single grant application. They are "consolidated" because they combine the recipient's Strategic Plan (3-5 years) describing long-term goals and objectives, the Annual Plan indicating how the entitlement monies will be spent in the upcoming year, and the Consolidated Annual Performance Evaluation Report (CAPER) describing how monies were actually spent and the accomplishments that resulted.

   While the Consolidated Plan is more a regulatory and financial document than a planning document, much of data and analysis performed – especially in the area of housing – form an excellent base for an Comprehensive Plan rewrite or update.
5. Other HUD Programs
   - The American Dream Downpayment Initiative (ADDI) was created to increase the homeownership rate among minority and low income households by offering assistance to first-time homebuyers with down payment and closing costs.
   - The Emergency Shelter Grant (ESG) provides basic shelter and support services to homeless people by providing assistance to the shelter operators. It can also provide short-term homeless prevention to those about to lose their homes.
   - The Brownfields Economic Development Initiative (BEDI) js a competitive grant to stimulate economic development in brownfields where there is actual or potential environmental contamination.
   - Youthbuild is a program allowing non-profits to teach at-risk teens housing construction skills and complete a high school education.

Historic Preservation

THREATS TO PRESERVATION

1. Funding sources at all levels and all origins are diminishing in favor of other programs.
2. Transportation projects are the single greatest threat preservation efforts. Even if not directly "touched" by a transportation project, a site can lose its historic value by losing the architectural and physical vernacular in which is was established.
3. Property rights can threaten preservation efforts, though a good preservation program will seek to preserve property rights wherever and whenever possible.
4. The development attitude that "you can't stop progress" which results in indiscriminate demolition of sites or preservation/reconstruction of only the façade.
5. Political action in the form of funding or legislation that preempts or sets aside local preservation efforts.

THE NATIONAL REGISTER OF HISTORIC PLACES

1. This program is administered by the National Park Service. The register itself is merely a list of properties deemed worthy of preservation.
2. Properties on the register may get some form of tax relief or federal assistance.
3. Federal money cannot be used to demolish a property on the register.
4. The inclusion of a property on the register neither prohibits the installation of improvements nor guarantees an increase in the property's value.

LOCAL HISTORIC DISTRICTS

A local historic district is a geographic area containing a group of sites that have been declared to be historically (or architecturally) significant.

Contributing Properties are properties that add to the historical (or architectural) integrity of the district as a whole.

The local district grants the greatest level of protection under the law over any federal or state designation because of the grassroots nature of the designation.

Charleston, SC began the modern paradigm in 1931 when it adopted an ordinance designating an "old and historic district" and created an architectural review board to administer it. It forbid the alteration of any structure which could be seen by the general public.

Local historic districts also generate much opposition because of the level of review and government control it places over private property.

To preserve the historic integrity of the district, the administering board (usually called the architectural review board) has power to approve or disapprove any proposed change to any structure within the district.

Recent studies indicate that placement in a local historic district depresses property values on the real estate market.

LANDMARKS

- A National Historic Landmark is a building, district, site, object, or structure designated by the United States government for its historical significance.
- The first National Historic Landmark was the Sergeant Floyd grave/monument in Sioux City , IA. It, with 90 others, were designated on June 30, 1960.
- There are just under 2500 National Historic Landmarks
- A National Natural Landmark is designated by the United States government to sites of particular interest to the natural history of the area.
- Designations under the National Natural Landmark program must have landowner concurrence; there is no law protecting the sites.
- National Natural Landmark status automatically extinguishes if the property transfers ownership.
- The National Natural Landmark program began in 1962.
- There are other landmark designations given (engineering landmarks, water landmarks, etc.) by private non-profit organizations.

Urban Design

FOUR MAJOR TRADITIONS OF URBAN DESIGN

1. **Monumental City Design**:
   Within the United States, broad tree-lined boulevards, groups of columned civic buildings, uniform building heights/setbacks, large waterfront parks, and parks with museums in them are usually the legacy of either Chicago's 1893 World's Columbian Exposition or the 1909 *Plan of Chicago* (by Daniel Burnham and Edward Bennett). These works were, in turn, heavily influenced by the alterations carried out on Paris under Baron Georges Eugene Haussmann – the Prefect of the Seine during the reign of Napoleon III in the 1850s and 1860s. Haussmann was, in turn, heavily influenced by (1) the "pilgrimage streets" built by Pope Sixtus V in Rome, (2) the great axial perspectives of Versailles, (3) Christopher Wren's work after the great fire of London in 1666, and (4) the "ring streets" of Vienna.
2. **Garden Suburbs and Garden Cities**:
   - *Garden Suburbs:* Alexander Jackson Davis's Llewelyn Park (West Orange, New Jersey, 1857) and Frederic Law Olmstead's Riverside (near Chicago, 1868) were the foundations for this tradition in America. Both of these suburbs left stretches of land clear for parks and greenways, and had curving streets and irregular lots that were landscaped to provide a park-like setting for houses. This pattern was influenced by the path system of English and Chinese gardens. Most modern suburban subdivisions embody some of these "garden suburb" principles in some form.
   - *Garden Cities:* Garden cities, as opposed to garden suburbs, were the radical social proposal of Ebenezer Howard. Howard's cities were to be self-sufficient communities, linked in clusters and surrounded by greenbelts. Letchworth and Hampstead Garden Suburb, English communities designed by Raymond Unwin and Barry Parker, are the main physical examples of Howard's ideas. Cul-de-sacs were invented at Hampstead Garden Suburb – a community that later influenced New York City's Forest Hills Gardens, New Jersey's Radburn, Maryland's Columbia, Virginia's Reston, and Clarence Perry's "Neighborhood Unit" principle. Radburn – which was designed in 1926 by Clarence Stein and Henry Wright – used cul-de-sacs and greenways to separate automobile and pedestrian traffic.
3. **Modernism**:
   This tradition was invented by Le Corbusier in his 1922 proposal for *La Ville Contemporaine*, a city of 3 million people. Modernism created a consistent urban image based on the tall building, the automobile, and the limited-access highway. Housing and office towers were grouped in abstract formal relationships that maximized expose to the sun. Each group of buildings was isolated from the others in a park-like setting. Stadiums, recreational facilities, and museums were placed along waterfronts. Flat roofs, planar surfaces with little ornamentation, and box-like building shapes came to be associated with Modernism. Post-modern buildings, such as Pittsburgh's PPG Tower, were a reaction to Modernist architecture.
5. **The Megastructure**:
   Downtown buildings connected by pedestrian bridges and the covered shopping mall are the legacies of this tradition, which is based on the concept of the city as one big building with interchangeable capsules. *Archigram 4*, a publication of the Archigram Group, probably did the most to popularize this tradition. Habitat, a housing project designed by Moshe Safdie for Montreal's Expo '67 is a prototype megastructure – composed of factory-constructed apartment modules.

NON-PHYSICAL ASPECTS OF URBAN DESIGN

1. William H. Whyte's book *The Social Life of Small Urban Spaces* promoted the use of environmental psychology and sociology in urban design.
2. Within conventional land use ordinances, urban design controls can be instituted at four levels.
   - Land use and density controls
   - Building bulk, setback, height, and shape controls
   - Performance requirements that address architectural and functional issues
   - Site plan and modeling reviews

NEOTRADITIONAL MOVEMENTS

A current trend in urban design is towards **neo-traditionalism** or **new urbanism** (see Seaside, Florida – designed by Plater, Zyberk, and Duany). The following features are commonly associated with neo-traditionalist designs.

1. Mixed use neighborhoods
2. Grid street patterns
3. An avoidance of wide, curving residential streets
4. Higher densities
5. Front porches
6. Commercial and residential lots with parking at the rear, facing alleys
7. An orientation that favors public transit instead of private automobiles
8. Buildings with stores on the ground floor and apartments on upper floors
9. A preference for parking garages over large parking lots
10. Minimal side and front setbacks
11. Communities focused on a town squares or other public gathering places

SMART GROWTH

Another current trend is the management of growth patterns. Smart Growth seeks to place growth where is most makes sense from an economic, social, and environmental standpoint. It seeks to balance the desires and concerns of multiple competing interests in developing the communities of tomorrow.

Housing

EARLY HOUSING EFFORTS

1. **The New York City Tenement House Law of 1867 (i.e., the "Old Law")**:
   This ordinance required new tenement buildings to provide (1) a narrow air shaft between adjacent structures, (2) windows that opened into this shaft, (3) two toilets on each floor (accessible from a common stairway or hall), and (4) a window of at least one square yard in each room. The Old Law was the first major housing code in the United States.
2. **The New York City Tenement House Law of 1901 (i.e., the "New Law")**:
   This ordinance was drafted by Lawrence Veiller – the first full-time housing reformer in the United States and the founder of the National Housing Association. Unlike earlier tenement laws, the New Law was vigorously enforced. Inspections and permits were required for construction, alteration, and conversion projects. The New Law created the first permanent tenement house department to administer and enforce the law's regulations. Furthermore,

the New Law required (1) wide light/air courts between structures, and (2) toilets and running water in each apartment unit. The New Law became the model for tenement house regulations across the United States.

3. In 1933, housing development in the United States was at its lowest point in a century. To combat this, the federal **Public Works Administration (PWA)** was created in 1934. Initially, the PWA was authorized to lend up to 85% of the cost of housing projects to public and private limited-dividend corporations and housing authorities. Thus, the first federally supported public housing project was constructed in 1934. Note that the PWA was later authorized to use eminent domain to acquire sites, and to engage directly in the construction of public housing projects.

IMPORTANT FEDERAL HOUSING LEGISLATION

1. **The Housing Act of 1934**:
   This law created the Federal Housing Administration (FHA).
   - The FHA was initially created to expand housing construction jobs. It did so by establishing a program that insured private home loans, thus removing the involved risk to bankers.
   - To minimize defaults on these loans, they were to be financed over longer periods of time with greater loan-to-value ratios, smaller down payments, and uniform, self-amortizing monthly payments. This revolutionized private housing finance.
   - To further minimize defaults on these loans, the FHA established minimum design standards for homes financed under the program. These standards were aimed at the upper-middle class – those least likely to default. However, these standards were rapidly copied into local zoning and building codes nationwide. Thus, housing that the middle and lower classes could afford temporarily became "substandard," and was "zoned out" of many cities.
   - After World War II, FHA-insured private home loans were to be repaid over a period of 25 years, and the home buyer was only required to have 10% of the financed amount as a down payment. These terms were quickly extended to the Veterans Administration (VA) programs. Together, the FHA and the VA ignited an explosion of private housing construction.
   - In 1947, all federal housing programs were consolidated under the Housing and Home Finance Agency (HHFA). Shortly thereafter, the first massive suburban subdivisions financed under the FHA program were constructed at Levittown, New York and Park Forest, Illinois.
   - The FHA program of insuring private home loans quickly began to change the face of America. In 1940, less than 45% of housing was owner-occupied. In 1960, over 60% of housing was owner-occupied. In 1983, 64.7% of housing was owner-occupied. Although the FHA now insures only a small proportion of private home loans (private mortgage insurance has largely taken its place), it nevertheless established a model that made home ownership the norm in the United States.
2. **The Housing Act of 1937**
   This law became the foundation for most future federal public housing programs for the poor.
   - The PWA's Housing Division was replaced with the U.S. Housing Authority (USHA).
   - Under USHA, local housing authorities used their state-granted powers of eminent domain to acquire sites.
   - The local authorities determined their local housing needs, and constructed and

operated public housing projects with USHA funds.
- USHA funded housing was only for families that had previously lived in substandard units. Furthermore, the rent for this housing couldn't exceed a set percentage of the involved family's income.
- USHA was abolished in 1940.

3. **The Housing Act of 1949**:
   This law created urban renewal, a federal program for central city redevelopment.
4. **The Housing Act of 1954**:
   This law expanded the urban renewal program. Furthermore, Title I, **Section 701** established the first federal matching funds for local comprehensive plans (but only for communities of less than 25,000 people). Section 701 plans were to be coordinated by state planning offices.
5. **The Housing Act of 1959**
   This law made federal matching funds available for comprehensive plans at the metropolitan, regional, state, and interstate levels.
6. **The Housing Act of 1961**:
   Section 221(d)(3) of this law provided interest subsidies to private nonprofit corporations, limited-dividend corporations, cooperatives, and public agencies for the construction of public housing projects for low and moderate income families to rent. Thus, this law was the successor to the Housing Act of 1937.
7 **The Housing and Urban Development Act of 1965**:
   This law created the U.S. Department of Housing and Urban Development (HUD), which superseded the old HHFA. Robert Weaver was HUD's first secretary. Furthermore, this law provided the following.
   - Rent supplement payments for those below the poverty line
   - Private home loans at 3% interest for low and moderate income families
   - Subsidies for an additional 240,000 low-rent public housing projects
8. **The Demonstration Cities and Metropolitan Development Act of 1966**:
   This law created the Model Cities Program. In this program, residents of "Model City Districts" (these were quasi-political organizations) decided on their own problems, priorities, and solutions. The federal government then funded these solutions.
9. **The Civil Rights Act of 1968**:
   Together with the U.S. Supreme Court's decision in *Jones v. Alfred H. Mayer Co.*, this law made racial discrimination in the sale or rental of housing illegal in the United States.
10. **The Housing and Urban Development Act of 1968**:
    This law provided for the construction of 6 million subsidized housing units over the next decade. **Section 235** of this law authorized HUD to subsidize monthly payments for private homes financed under the FHA mortgage insurance program by low and moderate income families. **Section 236** provided federal interest supplements for mortgages on multifamily rental and cooperative housing.
11. **The Intergovernmental Cooperation Act of 1968**:
    In 1969, while implementing this law, the U.S. Office of Management and Budget issued **Circular A-95**. This circular required areawide regional planning agency review of all proposals for local participation in federal development programs. This helped establish a base for regional planning efforts in the United States.
12. **The Housing and Community Development Act of 1974**:
    Before 1974, HUD's direct assistance to municipalities consisted of several categorical programs – each targeted toward a specific phase of urban development. This law

consolidated these programs into the **Community Development Block Grant (CDBG) Program**. CDBG funds are given to eligible municipalities on the basis of an entitlement formula. The recipient municipalities then have some latitude in using these funds. However, most of the money must go to activities that benefit low and moderate income households. Furthermore, it can only be used for community development activities – and not for regular municipal operations.

- However, the Housing and Community Development Act of 1974 went beyond establishing the CDBG program. **Section 8** of this law established a rent supplement program for low income housing. This program was unique in that either all or just a few of the units in a rental structure could be subsidized. Furthermore, the subsidized units could be new, rehabilitated, or existing. This significantly broadened the ways in which private rentals could be subsidized.

1. **The National Manufactured Housing Construction and Safety Act of 1974**:
   This law and its subsequently issued regulations defined "HUD Code" manufactured housing units (these units must have a steel chassis and wheels… even though they are rarely moved). These regulations further stated that the units could not be excluded from a community, although municipalities could regulate their locations, sizes, and appearances.
   - Thus, new manufactured homes fall into either one of two categories: HUD Code units or modular housing units.
   - More than half of new manufactured homes are placed on private sites (i.e., not in "trailer courts").
2. **The Housing and Community Development Act of 1977**:
   This law accomplished the following.
   - It practically killed the federal funding of local comprehensive plans that was established by **Section 701** of the Housing Act of 1954.
   - It created the **Urban Development Action Grant (UDAG)** program. This program assisted distressed cities and urban counties through "leveraging": i.e., providing limited federal funds to induce private investment in development projects (housing, commercial, or industrial). UDAG funds were awarded on a competitive basis. Although the UDAG program is currently inactive, its requirements are still vital to the distribution of CDBG funds.
   - In 1983, the **Housing Development Grant (HoDAG)** program was split off of the UDAG program to "leverage" housing projects exclusively. HoDAG funds were also awarded on a competitive basis.
3. **The National Affordable Housing Act of 1990**:
   This law initiated the HOME program for housing rehabilitation.

OTHER FEDERAL INVOLVEMENTS IN HOUSING

1. The federal regulation of financial institutions helps to protect a line of credit for housing.
2. The Federal Home Loan Bank system provides credit to and regulates federal savings and loan associations, which historically have been the principal source of mortgage credit.
3. Federal quasi-public agencies – such as the Government National Mortgage Association (GNMA) and the Federal National Mortgage Association (FNMA) – constitute the major secondary market for mortgages in the United States. These agencies buy mortgages from their original lenders, freeing these lenders to provide more mortgages. The mortgages purchased by GNMA and FNMA are then pooled and sold as "pass-through securities."
4. The Farmers Home Administration is a major source of loans for rural housing and community development.

5. However, the most important role played by the federal government in housing revolves around income taxes. The deductions allowed for mortgage interest and property taxes cost the government far more than all of its expenditures for low and moderate income housing.

STATE GOVERNMENT ROLE IN HOUSING

1. Almost all states have housing finance agencies.
2. Many states have consumer protection and anti-discrimination laws.
3. Many states have building codes.
4. Most states regulate and/or license congregate housing and group homes.

LOCAL GOVERNMENTS AND HOUSING

1. Since the Housing Act of 1937, local governments and housing authorities have borne the major responsibility for actually providing housing.
2. Local governments regulate housing through zoning, subdivision, consumer protection, anti-discrimination, building, and housing ordinances.
3. Local governments provide most of the infrastructure and services needed to build a community.
4. Some local governments finance their own housing subsidies through federal assistance, bonds, or appropriations.

HOUSING DYNAMICS

Housing can be thought of as having three interrelated components: supply, demand, and finance.

1. **Supply**: The vast majority of the housing in the United States is built by the private sector and is owner-occupied. This is somewhat unique among industrialized countries. The fluctuation in housing production each year has a major influence on the U.S. economy. Despite this, a relatively small portion of our housing stock is new (2% in 1983).
2. **Demand**: The demand for housing can be divided into many sub-markets: owner-occupied units, rentals, cooperatives, condominiums, locations, cost ranges, multifamily units, single-family units, etc... Housing demand is usually measured by the vacancy rate: rates between 4% and 5% are usually considered healthy. The **mobility** of the involved population is an important consideration to vacancy rates (according to the 1988 "Green Bible," 17% of the U.S. population moves annually – 60% stays in the same county, and 80% stays in the same state). **Filtering** is important to housing demand as well. For instance, new housing **trickles down** over its lifespan in a well functioning market – becoming available to lower-income families.
3. **Finance**: Thanks the Housing Act of 1934, housing is a highly leveraged commodity in the United States (i.e., the loan-to-value ratio is high, frequently 80% to 90%). The overall financing of housing includes (1) short-term loans for construction, (2) long-term mortgages, (3) mortgage insurance, and (4) secondary mortgage markets. Housing starts tend to be counter-cyclical, because capital is less available in a booming economy.

STANDARDS OF HOUSING ADEQUACY

The 1988 edition of the *Practice of Local Government Planning* (i.e., the "Green Bible") lists eight characteristics of an area's housing stock that can be used to measure the adequacy of that stock.

1. **Cost**: The cost of housing is measured as a percentage of household income. Although anything higher than 30% may indicate a problem, the real issue is how much money is left over for other basic needs – especially for low income families and the elderly.
2. **Condition**: The extent to which the condition of housing presents a threat to safety, health, or comfort is measured here.
3. **Crowding**: Generally, any housing unit with more than one person per room is considered crowded. With declining household sizes across the U.S., however, crowding is not so much of a problem as it once was.
4. **Design**: The availability of housing designed for special needs groups – such as the elderly or handicapped – is measured here.
5. **Choice**: The vacancy rates of various housing sub-markets are used here to measure the range of choices available.
6. **Community facilities**: The extent to which housing units are provided for in the community at large is measured here.
7. **Environmental factors**: The condition of the air, water, and ground surrounding homes is measured here.
8. **Control**: The degree of independence, dignity, and freedom provided by the designs of various housing units and the regulations of the involved governments is measured here.

HOUSING PLAN ELEMENTS

According to the 1988 "Green Bible," housing plans or plan elements are typically composed of the following parts.

1. **Housing market analysis**: Such an analysis projects the number of housing units that will be needed at some future time "X." It is usually based on studies of how many units currently exist, how many of these units will be destroyed by time "X," and the following "components of change."
   - *The change in the number and compositions of households:* Demographic and economic analyses and projections are used here.
   - *The change in the number of vacant units*
   - *The change in the existing supply of housing*
2. **An identification of the relevant issues**:
3. **Gathering and analyzing data**: The causes, nature, and extent of the problems identified above are explored here.
4. **Program objectives**: Realistic and achievable goals are set towards solving the problems studied above.
5. **Implementation**: The means of solving these problems are laid out and executed.

HOUSING KNOWLEDGE BASE

1. Higher densities, mixed use neighborhoods, and public transit tend to help single parent families.
2. Neighborhoods with more mixed land uses, higher densities, and higher degrees of transience tend to be more accepting of group homes.
3. According to the 1988 "Green Bible," only about one-fourth of all U.S. households are what was once considered "traditional" (i.e., a married couple with kids).
4. In the 1930s, many housing organizations split off of their parent planning commissions to increase their borrowing power.
5. **Catherine Bauer** was the first director of the USHA. Through her book *Modern*

Housing, she pushed for the passage of the Housing act of 1937. Her 1951 book *Social Questions in Housing* promoted social planning and condemned the federal urban renewal program.

6. The average number of persons in an American household over the past four U.S. Censuses is as follows.

THE AVERAGE NUMBER OF PERSONS PER HOUSEHOLD	
DECENNIAL CENSUS	AVERAGE NUMBER
1960	3.30
1970	3.11
1980	2.75
1990	2.63

Neighborhood Issues

NEIGHBORHOOD IDENTITY

- A neighborhood is a basic building block for a sense of community, but are usually not recognized in municipal or county planning efforts.

- Neighborhoods should engage (or be engaged) in the planning process with a comprehensive focus. If a particular neighborhood poses a particular opportunity or threat to the overall community, that issue should be addressed in a community-wide plan. Each neighborhood should receive the dignity and benefit of its own plan with a comprehensive scope.

- Neighborhood plans should support the municipal comprehensive plan. The municipal comprehensive plan, in turn, should recognize the place and role of neighborhood planning efforts.

- Neighborhood planning is best undertaken when the neighborhood organizes and the organization is empowered to engage the process and implement the plan.

- Neighborhood planning tends to focus only on physical issues, but to be effective must include social and economic issues as well.

- City regulations, particularly those under the purview of planning, should recognize and bolster a neighborhood's sense of place.

GRASSROOTS INVOLVEMENT

- Neighborhood planning works best from an advocacy and grassroots approach, which gives the neighborhood residents "ownership" of both the plan and implementation of it.

- In 1996, the US Department of Housing and Urban Development implemented the **Neighborhood Revitalization Strategy Area** concept. This allowed focused attention on a specific neighborhood and relaxed the paperwork requirements for the CDBG monies allocated to projects within the strategy area. The NRSA could not be government-initiated

or led, but needed to come from the neighborhood itself in a grassroots effort to better itself.

- The City of Seattle (WA) has had great success in grassroots neighborhood involvement for the betterment of residents' lives. It is well-documented in the book *Neighbor Power* and shows what can be done on as little as $1500 when a neighborhood gets behind a project.

- In areas where neighborhoods are not well-defined or are otherwise not a valid option, the planner must make efforts to include micro-local level concerns in planning processes and projects. The recognized grassroots initiative can go a long way in developing support for both the local government and planning in general.

EMPOWERMENT

- Municipal government should adopt a policy encouraging the formation of neighborhood organizations, including a set of criteria that make such organizations the official mouthpiece of the neighborhood.

- Neighborhood organizations should be funded and given what technical support is necessary to make/keep the organization legitimate and viable.

- Neighborhood leadership needs to meet within the neighborhood, with other neighborhood leaders, and with municipal officials to keep them abreast of the goings on throughout the municipality and coordinate efforts.

Rural & Small Town Planning

COMMUNITY SURVIVAL

1. Dwindling Populations - Disappearance
   Disappearance is one of two ways that many rural communities are losing the battle for survival. It is not a new phenomenon – communities have disappeared since the dawn of civilization. When local industry dries up and there is no work for the local population, people move to where the work is. Other factors are environmental catastrophe (i.e. Centralia) and war (which the US has not experienced). Most usually, for a community to survive, a viable industry or industries must be in place that utilizes the skills or abilities of the local population.

2. Expanding Metropolitan Areas - Assimilation
   Assimilation is another – more common – threat to the survival of rural communities. As metropolitan areas, or cities themselves, grow outward many of the former villages that previously dotted the countryside are simply assimilated into the metropolitan fabric and lose individual identity. Oftentimes rural villages have not been incorporated and even if they were they are too small to maintain individuality.

RURAL LIFESTYLES

1. Rural is generally defined as either 1) those areas outside the geographic boundaries of a Core-Based Statistical Area, or 2) those areas not included as "Urban Areas" in the Census.
2. The urban:rural population density ratio is approximately 18:1
3. Rural local government is generally unstaffed and the elected officials devote a small amount of time to the running of the community. It is a "hands-off" approach.
4. Sprawl is not an issue in rural areas, though oftentimes strip development along an existing state road out of a core village becomes sprawl-like.
5. Most rural societies are dependent on a single industry. If that industry falters, the entire community faces collapse.
6. 35%-40% of the nation's poor are in rural areas. The vast majority of the rural poor are located in the "deep south."
7. Less than 10% of the rural population is employed in agriculture. (less than 2% of the total national population)
8. Rural people are generally much less healthy than the urban counterparts and are much more likely to suffer chronic disease. Rural workers have more lost work days due to health issues and experience a higher infant mortality rate than urbanites.
9. Health care is lacking in rural areas because of lack of trained personnel and an inability (or unwillingness) to pay for health services. Oftentimes rural people will not seek medical attention early, waiting until it is much more difficult to successfully treat (and also much more expensive).
10. Rural businesses benefit disproportionately from the "invisible transport subsidy" because there are many more miles of rural roads and fewer people. Rural businesses also use a disproportionate number of heavy vehicles, which causes faster and more severe deterioration of the system.
11. 82% of the nations roads are in rural areas; 24% of the population is there.
12. Rural areas have 3 times the incidence of substandard housing (as measured by the US Census annual housing survey), including overcrowded conditions and insufficient structural elements (i.e. plumbing).
13. Where housing quality is concerned, rural housing consistently ranks below urban housing in every measure studied by the Census Bureau
14. The **Smith-Level Act** (1914) created the Cooperative Extension Service within USDA.
15. In 1908, President Roosevelt created the **Country Life Commission** to study the problems of rural life with an eye on improving conditions. It concluded 1)there is little to no objective understanding of the problems rural people (particularly farmers) face, and 2)farmers needed to remain self-reliant.
16. The **Tennessee Valley Authority (TVA)** was established in 1933 to assist a rural area of Appalachia that was under severe economic distress.
17. The **National Resources Planning Board** was created by President Roosevelt in 1934 and encouraged the establishment of state planning boards. The scope of these boards included rural land use, resource development, transportation, energy, socioeconomic issues, allocation of resources, suburbanization, those stuck in an area with no practical means out, and public works projects.
18. In 1967, Secretary of Agriculture Orville Freeman published ***Communities of Tomorrow***, which opined that urban living was destroying the fabric of the nation, and that geographically larger communities with spread-out development were a better solution.

AGRICULTURE

1. Agricultural land is taken out of service in favor of development at a higher rate than the population is growing.
2. One problem is that economic development does not recognize agriculture as a viable and/or useful economic activity.
3. Growth management is a critical component of agricultural support and preservation:
   - Agricultural zoning
   - Urban growth boundaries
   - Transfer of development rights
   - Conservation subdivisions
   - Agricultural easements
4. Agricultural land must be preserved in large blocks to maintain a critical mass of agricultural activity to keep it viable.
5. Agricultural preservation is not the same as open space preservation. Agricultural land is not open space; it is an industrial use.
6. Preserving the land and the right to farm is not enough. Financial mechanisms must be put into place to keep the farms financially viable. For instance a 100-acre farm should not be assumed to be worth 250 tax parcels taxed at a developed residential rate.
7. Agriculture must implement environmental stewardship practices to survive
   - Erosion management
   - Ground water protection
   - Stream buffering
   - Contour plowing
   - Chemical and waste application
8. Half the nation's food supply comes from farms in metropolitan and immediately adjacent counties, which is where the vast majority of development and population growth is projected to occur over the next four decades.
9. The first "Farm Bill" was a New Deal piece of legislation known as the **Agricultural Adjustment Act of 1933**. This act introduced the concepts of price support, production adjustments, and commodity loans, Some of the provisions (particularly production controls) were subsequently challenged and ruled unconstitutional.
10. The **Agricultural Adjustment Act of 1938** introduced mandatory pricing support to maintain supply of corn, cotton, and wheat in time of shortage. (A voluntary program was also created for other commodities.) This act, along the with **Agricultural Act of 1949** form the basis of agricultural law in the United States. If a farm bill authorization lapses, all federal program revert to the provisions of these two acts.
11. The **Food and Agricultural Act of 1965** began the subsidy program for milk.
12. The **Farmland Protection Policy Act of 1981** was designed to minimize the negative impact the federal government was having on converting viable farmland to other uses. All federal agencies are required to update their implementation procedures and policies every two years.
13. The **Food Agriculture Conservation and Trade Act of 1990 (FACTA)** was the first omnibus agriculture legislation. It continued to move agriculture back to a market-oriented approach, and included rural development, forestry, organics, and commodity promotion.
14. The **Agricultural Improvement and Reform Act of 1996** created the Rural Community Advancement Program and the Fund for Rural America, both of which provide funding to develop and maintain rural development interests and applied research projects.
15. In ***Bormann v. Board of Supervisors*** (1998), the Iowa Supreme Court struck down

"Right to Farm" legislation as unconstitutional on two fronts. First, it represented unequal treatment by granting farmers immunities not given other landowners, and second it created a *de facto* taking allowing a farmer to set his odors, noises, and light free across neighboring property. This gave him, in effect, an invasive easement across those properties, which requires compensation.

AGRICULTURAL ZONING

1. Zoning is the most commonly used tool to preserve farmland under development pressure.
2. Agricultural zoning can take the form of either *exclusive regulations* (i.e., non-farm buildings are not permitted) or *non-exclusive regulations* (i.e., non-farm buildings are permitted). Exclusive regulations are the most common of the two forms.
3. Non-exclusive regulations can take the form of either large minimum lot requirements or area-based allocations (i.e., the number of lots that can be subdivided out of an original lot is determined by the original lot's size).
4. Area-based allocations can take the form of either a fixed scale (i.e., one lot per every "x" acres of the original lot) or a sliding scale.
5. A sliding scale area-based allocation decreases the number of permitted lots per acre as the original lot gets larger. Thus, higher densities are allowed on smaller original lots.
6. In general, agricultural zoning regulations should be based on the following determinations.
   - prime farmland soils are involved
   - a strong local farm economy exists
   - local land values are low enough for farms to make a profit
7. Furthermore, agricultural zoning regulations should target the size of the farm core instead of the size of the entire farm.
8. Finally, agricultural zoning must be applied early in the development cycle for it to be effective.

ANNEXATION

Author's Note: The procedure for municipal annexation in Pennsylvania was never legislatively completed and relies heavily on a judicial and referendum-like process. Annexation is therefore rarely undertaken here. The following are generic notes combining generalized concepts from those areas that have a robust annexation process in place.

Annexation is the process of adding land to an incorporated area or swapping land between two or more incorporated areas.

Extraterritorial Jurisdiction is a power of incorporated municipalities to regulate land use for a certain distance outside the actual municipal boundary. This enables a municipality to set an orderly growth and development pattern in place before formal annexation occurs.

Annexation, especially when combined with extraterritorial jurisdiction, is an essential tool in the growth management toolbox. It allows a municipality to establish and maintain the order and systems already in place in the municipality, and can limit growth to lands immediately adjacent to the incorporated area.

Annexation preserves the identity of an urban area and provides for a unified socioeconomic structure under a single governmental jurisdiction.

Annexation can be a divisive issue, especially if the annexation involved landowners who have lived on their land for many years and wish to remain "rural" and outside the reach of a municipal government.

The Municipal Research and Services Center of Washington publishes a handbook entitled Annexation Handbook which has an excellent listing of the pros and cons of annexation near the end of Chapter One. It is available for viewing online: www.mrsc.org and search for "Annexation Handbook"

An **amicable annexation** occurs when the subject property owner(s) agree (or do not object to) a proposed annexation. Oftentimes an amicable annexation occurs when a developer wants to develop a tract of land and desires municipal services.

A **hostile annexation** occurs when the subject property owner(s) oppose a proposed annexation. This happens in situations where an unwilling landowner is situated between the incorporated area of a municipality and a tract proposed to be annexed, or in a case where the sum total of previous annexations have left and "island" of unincorporated land in the middle of a municipality, which now needs to be filled.

Plan Implementation

Land Use Regulations

THE STANDARD CITY PLANNING ENABLING ACT

1. The U.S. Department of Commerce published this document in 1928. Like the SSZEA, the Standard City Planning Enabling Act (SCPEA) was merely a model law that – when passed by a particular state – would enable that state's municipalities to do the following.
   - Create a planning commission, and endow this body with the power to review and approve all proposed public improvements and subdivisions
   - Create a regional planning commission
   - Develop a "master" (i.e., comprehensive) community plan
   - Develop a "master" (i.e., comprehensive) regional plan
   - Develop a master street plan
2. Like the SSZEA, nearly every state passed the SCPEA in one form or another. Thus, it was extraordinarily influential in the development of the modern planning framework.
3. The SSZEA and the SCPEA were both drafted by the same team of planning lawyers, headed by Edward Basset.
4. The SCPEA did not clearly define what comprehensive plans should address. Only five areas of concern were recommended for these plans: streets, other public grounds, public buildings, public utilities, and zoning.
5. Prior to the SCPEA, Wisconsin had passed the first state planning enabling act in 1909.
6. According to The Practice of Local Government Planning (i.e., the "Green Bible"), the SSZEA and the SCPEA are most notable for their weaknesses.
   - They failed to fully define the relationship between planning and zoning. They failed to clearly distinguish between a zoning ordinance's role as the regulation of existing uses and a comprehensive plan's role as the long-range view of what these uses should be. Thus, many municipalities adopted zoning ordinances without first drafting comprehensive plans.
   - They sanctioned the piecemeal adoption of a comprehensive plan's components. This led to uncoordinated functional planning.
7. Subsequent model planning enabling acts – such as the American Law Institute's *Model Land Development Code* (1976) – introduced concepts such as state and county coordination of local land use controls, regional reviews of **"developments of regional impact"** (DRIs), quasi-judicial re-zonings, and stronger connections between zoning and planning.

THE STANDARD STATE ZONING ENABLING ACT

1. The U.S. Department of Commerce published this document in 1922. It was merely a model law that – when passed by a particular state – would enable that state's municipalities to enact zoning ordinances.
2. In one form or another, nearly every state passed this model law. Thus, the Standard State Zoning Enabling Act (SSZEA) was extraordinarily influential in the development of modern zoning.
3. The SSZEA was drafted by a group of planning lawyers headed by Edward Basset – who had also directed the commission that developed the first modern zoning ordinance for New

York City (see below).
4. The SSZEA required that zoning ordinances be in "accordance with a comprehensive plan." However, there was no definition of what a comprehensive plan should be.
5. The SSZEA provided for the creation of a "zoning commission," but it noted that "where a city planning commission already exists, it may be appointed as the zoning commission." The zoning commission's role was to "recommend the boundaries of the various original districts... and hold public hearings thereon."
6. The SSZEA also provided for the creation of a quasi-judicial "zoning board," which was to hear appeals from the actions of administrative officers and interpret unclear provisions of the ordinance itself. A modern "zoning board" is most often called a "board of zoning adjustments," a "board of zoning appeals," and – in Pennsylvania – a "zoning hearing board." In many states (including Pennsylvania), this board also decides on requests for variances and special exceptions.

LOCAL LAND USE ORDINANCES

A full discussion of local tools for plan implementation is had in the Land Use section under Functional Topics.

Application of Legal Principles

THE LEGAL BASES FOR LAND USE CONTROLS

1. NUISANCE LAW:
   A. PRIVATE NUISANCES:

      BOVE v. DONNER-HANNA COKE CORP. (1932, New York State Court of Appeals): "An owner will not be permitted to make an unreasonable use of his premises to the material annoyance of his neighbor if the latter's enjoyment of life or property is materially lessened thereby... Whether the particular use to which one puts his property constitutes a nuisance or not is generally a question of fact, and depends upon whether such use is reasonable under all the surrounding circumstances." The physical nature, social value, extent, and duration of the nuisance are considerations, as well whether the plaintiff "came to the nuisance." Injunctive relief is usually appropriate here, although not always **(Spur Industries v. Del Webb Development Co. [1972, Arizona Supreme Court]).**

   B. PUBLIC NUISANCES: These are defined by statute.
2. THE POLICE POWER:
   A. **MUGLER v. KANSAS (1887, US Supreme Court):** To federal courts, the Fourteenth Amendment to the U.S. Constitution merely imposes a duty to strike down legislative acts that have "no real or substantial relation" to the proper objects of the police power: "protection of the public health, the public morals, or the public safety." In saying this, the Court validated state and local government actions that properly protect "the public health, the public morals, or the public safety."

HOW TO CHALLENGE A LAND USE REGULATION

1. PROVE THAT THE REGULATION DOESN'T HAVE A VALID PUBLIC PURPOSE: **NECTOW v. CITY OF CAMBRIDGE (1928, US Supreme Court):** A zoning ordinance was struck down because it had no valid pubic purpose: i.e., it did not promote the health, safety,

morals, or welfare of the people of Cambridge. The rational basis test (i.e., lower level scrutiny) is used here.

2. PROVE THAT THE REGULATION'S MEANS AREN'T RELATED TO ITS ENDS: The rational basis test is used here too.
3. PROVE THAT THE REGULATION IS NOT CONSISTENT WITH THE STATE'S CONSTITUTION, ZONING ENABLING LEGISLATION, OR CASE LAW:
   A. **FASANO v. BOARD OF COUNTY COMMISSIONERS OF WASHINGTON CO. (1973, Oregon Supreme Court):** This case shifted the burden of proof to the municipality in rezoning cases in Oregon, thus making rezonings a quasi-judicial action. This case practically required all zoning in Oregon to be consistent with comprehensive planning, although the state's planning enabling statute finalized this requirement.

   B. **SOUTHERN BURLINGTON COUNTY NAACP v. TOWNSHIP OF MT. LAUREL I (1975, New Jersey Supreme Court) AND SOUTHERN BURLINGTON COUNTY NAACP v. TOWNSHIP OF MT. LAUREL II (1983, New Jersey Supreme Court):** In these two cases, the New Jersey Supreme Court overturned a township's zoning ordinance because it was inconsistent with the fair housing clauses of the New Jersey State Constitution. The second case detailed the rulings of the first, and forced a specific fair housing scheme on the township.

4. PROVE THAT THE REGULATION CONSTITUTES A TAKING (FIFTH AMENDMENT, U.S. CONSTITUTION):
   A. If the regulation causes a physical invasion of property, then it is a taking **(LORETTO v. TELEPROMPTER MANHATTAN CATV CORP. [1982, US Supreme Court]).**
   B. If the regulation is not based on a public nuisance statute, and the regulation causes the property to lose all economic value, then it is a taking **(LUCAS v. SOUTH CAROLINA COASTAL COUNCIL [1992, US Supreme Court] and AGINS v. CITY OF TIBURON [1980, US Supreme Court).**

   C. If the regulation does not "substantially advance a legitimate state interest," then it is a taking ("Footnote 3" of **NOLLAN v. CALIFORNIA COASTAL COMMISSION [1987, US Supreme Court]**). Note that this appears to raise the public purpose test – apparently in takings cases only – from the rational basis test (i.e., lower level scrutiny) to the legitimate state interest test (i.e., intermediate scrutiny).

   D. If the regulation does not involve an exaction, then it will be found to constitute a taking unless it passes the "ad hoc factual inquiry" imposed by **PENN CENTRAL TRANSPORTATION CO. v. THE CITY OF NEW YORK (1978, US Supreme Court)**. This inquiry consists of (1) weighing the economic impact of the regulation on the claimant, and especially on his investment backed expectations; (2) weighing the character of the regulation; and (3) determining whether or not the regulation sufficiently deprives one of property or rights.
   E. If the regulation does involve an exaction, then it will be found to constitute a taking unless it passes both the "rational nexus" test **(NOLLAN v. CALIFORNIA COASTAL COMMISSION [1987, US Supreme Court])** and the "rough proportionality" test

(DOLAN v. TIGARD [1994, US Supreme Court]). That is, is there a logical connection between the governmental action and its goal, and is the property owner's burden roughly proportional to the public benefit? Note that *Dolan v. Tigard* required municipalities to make precise and specific findings before imposing an exaction on a proposed development's impact.

5. PROVE THAT THE REGULATION VIOLATES THE EQUAL PROTECTION CLAUSE OF THE FOURTEENTH AMENDMENT (U.S. CONSTITUTION): Note that there must be unequal treatment among groups for such a challenge to arise in the first place.
   A. Does the unequal treatment of groups deny a fundamental right? If so, the regulation will be subject to the "strict scrutiny" test (i.e., the involved government will be forced to prove that a "compelling state interest" was at stake). **VILLAGE OF BELLE TERRE v. BORAAS (1974, US Supreme Court)** found that zoning may allow only families in a zoning district -- and thus bar households of no more than two unrelated persons from that district – without interfering with the rights to travel or migrate. This eliminated many fundamental rights challenges.

   B. Does the unequal treatment of groups involve a "suspect classification?" If so, the regulation will once again be subject to the "strict scrutiny" test. "Suspect classifications" are currently defined as those involving race, alienage, or national origin. However, an intent to discriminate must be found **(VILLAGE OF ARLINGTON HEIGHTS v. METROPOLITAN HOUSING DEVELOPMENT CORP. [1977, US Supreme Court]).**

   C. Does the unequal treatment of groups involve a "quasi-suspect classification?" If so, the regulation will be subject to the "intermediate scrutiny" test (i.e., does the regulation "substantially advance a legitimate state interest?"). "Quasi-suspect classifications" are currently defined as those involving gender or illegitimacy. However, an intent to discriminate must be found **(VILLAGE OF ARLINGTON HEIGHTS v. METROPOLITAN HOUSING DEVELOPMENT CORP. [1977, US Supreme Court]).**

   D. If the involved regulation does treat different groups unequally, and if it does not involve a fundamental right, a suspect classification, or a quasi-suspect classification, then the regulation will be subject to the lower level scrutiny "rational basis" test. In **CITY OF CLEBURNE v. CLEBURNE LIVING CENTER (1985, US Supreme Court)**, the Court determined that the mentally challenged are neither a suspect nor a quasi-suspect classification. However, a provision of Cleburne's zoning ordinance that banned group homes for the mentally challenged was struck down using the "rational basis" test.

6. PROVE THAT THE REGULATION VIOLATES THE FIRST AMENDMENT OF THE U.S. CONSTITUTION:
   A. If the regulation is not content-neutral, then it will be subject to the "strict scrutiny" test (i.e., does the regulation further a "compelling state interest?").

   B. If the regulation is content-neutral, then it will be subject to the "intermediate scrutiny" test (i.e., does the regulation "substantially advance a legitimate state interest?").

Furthermore, the courts will strike down the regulation unless it (1) allows a reasonable alternative means of communication, (2) is as narrowly defined as possible, and (3) is a reasonable time, place, and manner restriction. Parts of this test (i.e., "A" and "B") were substantiated by **CENTRAL HUDSON v. PUBLIC SERVICE COMMISSION (1980, US Supreme Court)**.

C. Here are some important First Amendment cases:
   1. **CITY OF RENTON v. PLAYTIME THEATRES, INC. (1986, US Supreme Court):** In this case, a zoning ordinance that limited sexually oriented businesses to a single zoning district (constituting 5% of the City's total area) was subjected to the above test.[9] Note that the Court allowed Renton to use a study that had been done in Seattle, and didn't require Renton to guarantee that there was a reasonable alternative place to set up shop. (This may suggest that a different "intermediate scrutiny" test was used here than in *Dolan v. Tigard*.)
   2. **METROMEDIA, INC. v. CITY OF SAN DIEGO (1981, US Supreme Court):** In this case, an ordinance that banned all off-premises signs was subjected to the above test. The ordinance was overturned because it effectively banned non-commercial signs, which rarely have "premises" to be located on. The case put forward the rule that neither commercial nor non-commercial speech can be favored over the other.
   3. **MEMBERS OF CITY COUNCIL v. TAXPAYERS FOR VINCENT (1984, US Supreme Court):** Here, the Court upheld a Los Angeles ordinance that banned attaching signs to utility poles. The ordinance passed the above test, and in doing so, proved that aesthetics can satisfy the requirement of substantially advancing "a legitimate state interest."

TAKINGS RELIEF & INVERSE CONDEMNATION

Until **FIRST ENGLISH EVANGELICAL LUTHERAN CHURCH OF GLENDALE v. COUNTY OF LOS ANGELES (1987, US Supreme Court)**, the only relief for a landowner who had suffered a taking at the hands of a land use regulation was a writ of mandamus, which simply struck down the regulation. However, the Court decided in *First English* that the Just Compensation Clause of the Fifth Amendment (U.S. Constitution) requires that governments pay for the "temporary" taking in the time between the loss of property and the writ of mandamus.

EMINENT DOMAIN

Eminent domain actions must have a valid public purpose (rational basis test). In **BURMAN v. PARKER (1954, US Supreme Court)**, the court decided that aesthetics were a valid public purpose for an eminent domain action.

ZONING

- **HADACHECK v. SEBASTIAN (1915, US Supreme Court)**: The court first approved regulating the location of land uses.
- **WELCH v. SWASEY (1909, US Supreme Court):** The court first approved building height controls.
- **EUBANK v. CITY OF RICHMOND (1912: US Supreme Court):** The court first approved setback regulations, although it overturned the particular setback scheme in this case.

- **VILLAGE OF EUCLID v. AMBLER REALTY CO. (1926, US Supreme Court):** Based on an "Average Reciprocity of Advantage," a "Public Nuisance Analogy," a "Market Allocation Analogy" (zoning corrects a market failure), and the purposes of "Aesthetics and Plan Implementation," the U.S. Supreme Court stated that modern zoning is a proper use of the police power. In doing so, the court brought together cases "I" through "III" above. Alfred Bettman filed a brief with the court that largely changed its mind over *Euclid*.

LAND USE

- **PENNSYLVANIA COAL CO. v. MAHON (1922, US Supreme Court):** "The general rule is that while property may be regulated to a certain extent, if a regulation goes too far, it will be recognized as a taking."[13] This case is the basis for the modern definition of a "taking" under the 5th Amendment to the U.S. Constitution.
- **JONES v. MAYER (1968, U.S. Court of Appeals for the Eight Circuit):** This was a housing discrimination case, in which it was ruled that racial barriers cannot affect the acquisition of property.
- **JAMES v. VALTIERRA (1971, US Supreme Court):** An amendment to the California State Constitution mandating a referendum on all local housing projects was upheld, as an intent to racially discriminate could not be found.
- **CITY OF EASTLAKE v. FOREST CITY ENTERPRISES, INC. (1976, US Supreme Court):** Mandating referendums on rezonings was upheld on similar grounds as *James v. Valtierra*.
- **YOUNG v. AMERICAN MINI THEATRES, INC. (1976, US Supreme Court):** A zoning scheme that decentralized sexually oriented businesses in Detroit was upheld.

GROWTH MANAGEMENT

- **GOLDEN v. PLANNING BOARD OF THE TOWN OF RAMAPO (1972, New York State Court of Appeals):** A growth management system that awarded points to development proposals based on the availability of public utilities, drainage facilities, parks, road access, and firehouses was approved by the New York Court of Appeals. Developers could increase their point total by providing the involved facilities themselves. Only after a proposal reached a certain point total could it be approved by the Town of Ramapo. This growth management system has since been copied.
- **SONOMA v. PETALUMA (1975, US Court of Appeals for the Fourth Circuit):** Quotas on the annual number of building permits were upheld.
- **ASSOCIATED HOME BUILDERS OF GREATER EAST BAY v. CITY OF LIVERMORE (1976, California Supreme Court):** Temporary moratoriums on building permits were upheld in California.
- **RESTIGOUCHE v. JUNIPER (US Court of Appeals):** An ordinance requiring neo-traditional design elements was approved as an appropriate use of the police power.

ENVIRONMENTAL POLICY

- **CALVERT CLIFFS COORDINATING COMMITTEE v. U.S. ATOMIC ENERGY COMMISSION (1971, US Supreme Court):** An approval for a nuclear power plant from the AEC was overturned because the AEC did not follow the requirements of NEPA. This case gave the requirements of NEPA teeth.

RELIGION

- **COHEN v. DES PLAINES (1990, US Supreme Court):** Zoning cannot be used to give churches an advantage over competing commercial establishments. In this case, an ordinance that allowed a church to operate a day care center in a zoning district where commercial day care centers were banned was overturned.
- **OREGON v. SMITH (1990, US Supreme Court):** The facially neutral regulation of religious services is OK, as long as it doesn't hinder the religion itself. This case approved a ban of peyote in Native American religious services.

Environmental Impact Analysis

1. Environmental impact analyses (1) study the environmental impacts of a proposed project in a specific location, (2) consider alternatives to the project, and (3) analyze mitigation measures.
2. The environmental impact statements required by NEPA involve a form of EIA.
3. There are five approaches to EIA…
   - **The Ad Hoc Approach**: This approach involves obtaining "best estimates."
   - **The Checklist Approach**: This approach involves using an appropriate checklist.
   - **The Matrix Approach**: This approach uses a table, with competing alternatives forming the columns and impact classifications forming the rows.
   - **The Network Approach**: This approach involves tracing an action through multiple iterations. It is good at identifying secondary impacts.
   - **The Cartographic Approach**: This approach involves the use of several maps – each containing relevant environmental information – in an overlay fashion. See Ian McHarg, above.

More discussion on environmental issues is given under the environmental quality topic in the Functional Topics section

Growth Management Techniques

THE CHARACTERISTICS OF URBAN GROWTH

1. There are five primary characteristics of urban growth that growth management systems can address: the rate, amount, type, location, and quality of growth.
2. There are innumerable secondary characteristics of urban growth. These characteristics can be defined as "impacts," and can be used to judge the success of a growth management system. Some examples of secondary growth characteristics would be environmental, fiscal, or regional parity impacts.

CONCURRENCY

1. Concurrency-based approaches to growth management simply limit development to areas with adequate public infrastructure. The Town of Ramapo, New York produced an influential concurrency-based growth management system.
2. **Ramapo**: In the early 1970s, the Town of Ramapo (in New York State, "towns" are the equivalent of Pennsylvanian "townships") adopted a zoning ordinance that made the "issuance of a development permit contingent on the presence of public utilities,

drainage facilities, parks, road access, and firehouses. Although the community did intend to provide the required facilities in the future, new development could proceed promptly only if its location would not demand new facilities in advance of Ramapo's schedule. The community developed an elaborate point system to determine under what circumstances a developer could be granted a permit. Ramapo reported in 1974 that this program had reduced housing starts by one half." (Page 53, *The Practice of Local Government Planning*) Although Ramapo abandoned this system in the 1980s, it was upheld by the New York Court of Appeals (equivalent to the Pennsylvania Supreme Court) in *Golden v. Planning Board of the Town of Ramapo* (1972). Thus, it initiated a wave of no-growth or slow-growth management programs nationwide.

3. **Petaluma**: Following the lead of Ramapo, the City of Petaluma, California (just north of San Francisco) set a simple annual quota on building permits at 500 per year beginning in 1971 (in 1970, Petaluma had issued over 2,000 building permits). In 1975, the Ninth U.S. Circuit Court of Appeals upheld Petaluma's quota system in *Construction Industry Association of Sonoma County v. City of Petaluma*.
4. **Livermore**: In 1976, the California Supreme Court upheld a temporary moratorium on building permits in *Associated Home Builders of the Greater East Bay v. City ofLivermore*. Livermore had imposed the moratorium until certain performance criteria were met for the city as a whole.
5. **Florida**: The State of Florida's concurrency law prohibits new development unless adequate infrastructure is – or soon will be – in place.

BASIC LEGAL CONSIDERATIONS

In order to be legal, growth management techniques must be authorized by statutory or case law, meet the constitutional requirements for substantive due process, and not exclude protected groups (e.g., low income households).

Budgets

THE BUDGETARY PROCESS

1. According to *The Practice of Local Government Planning*, there are eight "essential" steps in the **traditional budgeting process**.

    - **Fiscal analysis and policy choices**: Local demographic and economic conditions are analyzed to roughly forecast governmental revenues and expenditures. Local government finances and programs are also analyzed to identify general trends. Budgetary policy choices are made.
    - **Expenditure estimates**: At this stage, the government's various departments help to make the above expenditure estimates more detailed and accurate. Each department analyzes its own programs and services in detail, focusing on salary, equipment, capital, and operating costs.
    - **Review of expenditure estimates**: The point of this stage is "to hammer out the allocation of resources among competing demands." Department heads advocate their programs and services. Because the relevance of expenditures to policy objectives is tested here, this may be the most important step in the traditional budgeting process.
    - **Revenue estimates**: At the same time as the previous step, the budget officer and

the revenue-collecting departments make the final revenue estimates. Each revenue source is treated separately, and specific trends are identified.

- **Budgetary forecasting**: Based on the above estimates, budgets are estimated for up to four or five years into the future. This is used to identify long term trends, and is vital to capital improvements programming.
- **The budget document**: Here, the budget document itself is prepared and presented to the governing body. It represents (and may contain) all of the estimates, projections, administrative decisions, budgetary policies, and proposals (by department, program, and function) that have been prepared to this point.
- **Budget review and adoption**: Here, the governing body reviews, amends (if necessary), and adopts the budget.
- **Budget execution**: The budget is adopted and executed.

2. Traditional municipal budgets are **line item budgets**, in which expenditures are divided into simple classes such as personnel, equipment, and insurance. However, line item budgets are not easily used as management tools. **Performance budgets** – in which (1) expenditures are organized by the services that they provide (e.g., police protection, parks, etc…), and (2) evaluation standards are set for each service or program – are better suited for managing. The "Green Bible" lists three performance budget models.

    - **The Planning Programming Budgetary System (PPBS)**: This system was developed by Robert McNamara's "whiz kids" in the U.S. Department of Defense during the Kennedy administration. PPBS has four distinct characteristics: (1) it focuses on the fundamental objectives or purposes of a program (thus, it is a performance budgeting system), (2) it explicitly identifies the future implications of current budgeting decisions, (3) it considers all costs, and (4) it systematically analyzes alternative programs. Although PPBS was expected to revolutionize municipal decision making, it did not because it was too complex.

    - **Zero-Base Budgeting (ZBB)**: This system was developed by Texas Instruments in the 1970s. ZBB works against the tradition of taking last year's budget as a given, and adding a little for inflation and expanding programs. In a ZBB system, last year is a closed book, and every program must be justified as if it were brand new. The "Green Bible" lists four steps to ZBB: (1) "decision units" are isolated, (2) the decision units are analyzed into "decision packages," (3) the decision packages are prioritized by management, and (4) the budget is compiled – based on the available resources and the above prioritization.
    - **The Dayton System ("Program Strategies")**: This is a simplified combination of PPBS and ZBB. It has been far more influential among larger municipalities than either one of its parents. In a Dayton System budget, programs are typically listed as rows. Categories such as the responsible department(s), the necessary amounts of staff time, the allocations from last year's budget, and the allocations in this year's budget are listed as columns.

3. A **program budget** is a performance budget that is exclusively organized by programs.
4. Aaron Wildavsky is credited with coining the phrase that a budget is "goals with price tags attached."

CAPITAL IMPROVEMENTS PROGRAMMING (CIP)

1. "**Capital improvements programming** is the multiyear scheduling of public physical improvements. The scheduling is based on studies of the fiscal resources available and the choice of specific improvements to be constructed for a period of *five* to *six years* into the future. The **capital improvements budget** refers to those facilities that are programmed for the *next fiscal year*. A **capital improvements program** refers to the improvements that are scheduled in the succeeding *four* or *five year period*. An important distinction between the capital budget and the capital improvements program is that the one-year budget may become a part of the legally adopted annual operating budget, whereas the longer-term program does not necessarily have legal significance…" (Page 449 of the "Green Bible").
2. Capital improvements programming dates back to the 1909 *Plan of Chicago*.
3. Capital improvements programming should include only expenditures for physical facilities with relatively long lifespans.
4. Capital improvements programming provides a framework for long-range municipal financial planning and debt management. Furthermore, it can be used to coordinate the construction of public facilities with each other and with the area's growth management plans or impact fee systems.
5. Capital improvements programs are often reviewed by the jurisdiction's planning commission.
6. Capital improvements programming should involve long-term forecasts of economic conditions, demographics, governmental revenues, and governmental expenditures. Fiscal policies should be set beforehand regarding the acceptable levels of debt, the preferred funding devices, the extent to which certain capital facilities will be financially self-sufficient, and the degree to which outside grants will be used. Thus, capital improvements programming is a three phase process.
   - Planning (the needs for various capital facilities are estimated and compared)
   - Financing (the financing alternatives for the selected capital facilities are analyzed and compared)
   - Programming (a detailed schedule of capital facility projects and financing methods is prepared and executed)

PUBLIC FINANCING TOOLS

1. **Tax Increment Financing (TIF)**

   A TIF program must be established under the guidelines of state authorizing legislation, and typically works as follows.

   - A TIF district is established around a blighted area.
   - TIF bonds are issued to redevelop this area.
   - After the area is redeveloped, the additional property tax revenues earned by the reassessed district (i.e., the "tax increment") are used to retire the TIF bonds. Thus, these additional revenues cannot be used by the involved municipalities, school districts, and special taxing authorities until the TIF bonds are retired.

2. **State and federal grants**
   Grants are monies that are given to a recipient with no expectation of repayment, but generally have conditions attached. For example, the Community Development Block Grant program has specific guidelines that must be followed in spending the money.

3. **Current revenues**
   Current revenues are sometimes called "the levy" and refer to the monies raised through traditional taxing methods. With the exception of special taxes (i.e. assessment districts, shade trees, etc.) there are no limits on what the money can be spent.
4. **Reserve funds**
   These are funds that are placed aside for emergency purposes or for times when an expenditure is needed that simply cannot be accommodated in the current budget. Use of these monies should be limited to these two situations, and not be considered a "rainy day fund" available for the latest political whim.
5. **General obligation bonds**
   The full taxing power of the involved municipality, school district, or special taxing authority is pledged to retire these bonds. Thus, they may require voter approval.
6. **Revenue bonds**
   These bonds are usually sold to finance projects that will produce revenues (which will be used to retire the bonds). Revenue bonds are *not* backed by the full taxing power of the involved municipality, school district, or special taxing authority. Thus, they do not usually require voter approval, and are not usually included in state mandated debt limits. However, they usually involve a higher interest rate.
7. **Put-option bonds with call provisions**
   These bonds allow the involved municipality, school district, or special taxing authority to call the bonds back when interest rates are lower. The bonds are then re-issued at the lower interest rate. Both general obligation and revenue bonds can be issued in this manner. Note that bond ratings (and thus, the involved interest rates) can also be lowered by the use of **bond insurance**.
8. **Lease-purchase arrangements**
   Here, a private company builds a facility or provides a piece of equipment. The involved government then rents-to-own the item.
9. **Special taxing authorities or districts**
   Here, a geographical district is delineated. The residents and businesses of that district are then assessed a special tax, the proceeds of which are used to fund the involved project or purchase. Note that too many overlapping districts can limit a community's bond ratings and borrowing power. **Intergovernmental bonding committees** can be used to coordinate these districts to some degree.
10. **Special assessments**
    Here a special tax is assessed on those who will benefit from the project or purchase being financed.
11. **User fees**
    Here, user fees are used to fund the project or purchase being financed. Sometimes, **indirect general obligation bonds** are used to back up user fees. These bonds pledge the full taxing power of the involved municipality, school district, or special taxing authority to repay the debt *if* the user fees are insufficient.

PROPERTY TAXES

1. Property taxes are the main source of income for local governments and school districts in the United States.
2. The amount of property taxes earned by a particular property in a given year is the product of the property's assessed value and the local millage rate. According to the "Green Bible," the typical process by which a property's assessed value is determined is as follows.

- The property's market value is determined.
- Any assessment reduction ratios that are required by the state are applied to this value.
- Any exemptions that are required by state or local governments are applied to this value.
- State equalization ratios are applied to this value to correct any systematic regional differences.

3. A "mill" is one-tenth of one cent. Property tax rates are usually expressed in terms of "mills" (e.g., "six mills per dollar of assessed value") because expressing them in terms of cents would lead to gross over-taxation or under-taxation.
4. Property taxes have the following disadvantages.
   - They tend to be regressive.
   - They can foster the practice of **fiscal zoning**. This is defined as zoning an excessive amount of a municipality for land uses that generate more tax revenues and less governmental expenses. Industrial or commercial facilities tend to be the most "profitable" land uses to governments that depend on the property tax, while low income housing projects tend to be the least "profitable." Note that sales taxes can also foster fiscal zoning.
   - In growing areas, simple property taxes can foster **sprawl** by driving up the assessed value of undeveloped or agricultural land until the landowner has no choice but to develop it. Simple property taxes can also discourage the **rehabilitation** of deteriorating buildings. A **site value/land value property tax** system can avoid these two problems.
5. In taxation in general, **"horizontal equity"** means that people in equal economic situations are taxed equally. **"Vertical equity"** means that people in unequal economic situations are taxed unequally.

Development Project Review

BACKGROUND INFORMATION

Any review should start with a thorough understanding of the site and what is around it. Factors that must be considered include:

- **The Land Itself**
  This review includes soils, topography, geology, and the economic value of the land in its current state and in its proposed final state.
- **The Natural Geography**
  The natural geography includes the natural elements of the site and how they interact with each other and with natural elements off-site. Such elements include large tree specimens, unique vegetative growth, waterways, ponds, ground water, wildlife issues, sun angles, wind directions, and other natural elements. Again, these all need to be considered in their current state with the proposed final state in mind.
- **The Human Geography**
  The human geography is all the effects and impacts that humankind has had on the site and its surroundings. This includes physical features such as existing houses or shops, old foundations, streets, trails, railbeds, utilities, and schools. It also includes non-physical elements such as transportation mode choices, historical significance, economic impacts, demographics, school populations, legal and deed restrictions, and the comprehensive plan.

MARKET CONSIDERATIONS

Many government agencies do not consider the market implications of the project. Neither do they consider the regulatory impact on the market or the site. A simple market study will reveal whether the applicant has a viable long-term project, or if the project will ultimately be a blight on the community. These considerations should include:

- A basic pro-forma for the development showing expenses and revenues and rate of return
- Demand for the proposed use or service
- Current supply of the proposed use or service
- Service mix in the community and holes in that mix

PLAN REVIEW

The plans need to be checked against the existing regulatory framework. Deficiencies should be addressed, or a good reason given why the developer cannot comply with a particular provision. This reason should be supported by facts and research. Plans need to demonstrate good interaction between properties, a recognition that the landscape continues beyond the project boundaries, proper transportation and utility facilities, and be sensitive to its context.

Beyond this, the planner needs to be cognizant of the overall community values; especially those called out in the comprehensive plan and other planning documents. The "customer" in plan review is not just the applicant coming through the door, but each and every individual in the community at large.

THE LEGAL PROCESS FOR DEVELOPMENT APPROVAL

It is difficult for this to be tested as the specifics vary in each state. Be aware that the planner is generally responsible to make an unbiased professional-level recommendation to a committee or board. Except in very rare cases, the planner does not have approval authority. Often, the recommendation is made to a planning body that is again charged only with power to recommend to the governing (elected) body for the community.

Also, due process requires that all parties have opportunity to be heard, that plans be available for inspection, and all decisions can be appealed by any aggrieved party.

Program Evaluation

APPROACHES TO PROGRAM EVALUATION

1. **Pragmatic**
   This tends to be constituent-based and short-term. It seeks immediate solutions to problems to assuage the constituency without much consideration to the long-term outcome. This approach is often taken by elected officials.
2. **Adaptive**
   The adaptive approach seeks to make incremental changes in a flawed policy to make progress to achieve a long-term goal. While a long-term goal is envisioned, it oftentimes is not defined or clearly recognized.
3. **Cognitive**
   The cognitive approach seeks to define the problem(s) at hand, then define the long term goal(s) before making any changes. The cognitive approach results in a well-patterned path for overcoming problems, but is slow in implementing and adapting to change.

TWO TYPES OF PROGRAM EVALUATION

1. **Positive Analysis**
   The positive analysis process is purely descriptive in nature. It merely defines and describes the current situation and direction. It answers the basic question as to whether the program or policy is achieving the desired effect or outcome.
2. **Normative Analysis**
   Normative analysis is more prescriptive. It forecasts outcomes and alternatives and make specific recommendations on a course of action.

THE PROGRAM EVALUATION PROCESS

1. **Define the problem**
   The problem must be stated in a manner that can be addressed by the process and the tools at hand. For purposes of this process, if no solution can be achieved, there is not really a problem to be solved. The problem should be critiqued and evaluated to ensure it can be addressed by this process.
2. **Detail the problem**
   This step provides details such as the origin of the problem, concerned parties, reasons for the concern, motives of the parties, past successes and failures, similar issues.
3. **Specify the evaluation criteria**
   Detail the ways in which each alternative solution will be evaluated. Rank the criteria in order of importance (i.e. cost, passage, disenfranchisement, etc.). This will further define the problem and may start to formulate desirable and undesirable outcomes.
4. **Identify Alternatives**
   This is one of the most critical steps. It is important to clearly define alternatives, and be sure the alternatives are real ones. Formulate the alternatives by using experience (yours or others), experimentation, "what ifs," and objectivity. The status quo is always an alternative in this process.
5. **Evaluate Alternatives**
   This step identifies how each alternative will impact the problem and produce a viable solution. Many analytical techniques can be employed at this point. Be sure to keep the evaluation within the bounds of the evaluation criteria specified in step three.
6. **Identify Impacts**
   These impacts can be real or perceived, rational or political. It is impossible to have complete information, especially within the timeframes generally associate with this type of process, so keep these impacts open and flexible enough to "roll with the punches" as there are sure to be some surprises.
7. **Rank the Alternatives**
   A simple ranking is a start, but the ranking must include a defense of each alternative. This defense is related to the discoveries made in steps four through six and can include reasoning s as to why the alternative is ranked as it is. Additional material may be necessary to complete a proper ranking.
8. **Restate the Problem**
   Before a particular alternative is held above the others for implementation, the problem must be restated to be sure the problem and solutions are still relevant, that an aspect has not been overlooked, and that other problems have not been revealed that also need to be addressed before implementation.

9. **Outline the Next Steps**
   The outline is a roadmap for implementation. It identifies the tasks, and those responsible to carry them out. It may include deadlines – particularly if the commencement of one task is dependent on the completion of another. The outline should include monitoring or reevaluation as an ingredient.

TOOLS FOR PROGRAM EVALUATION

This is simply an annotated listing of tools. Some are described in greater detail elsewhere in these study notes, and others are available in planning publications.

1. **Operation Research**
   A critical analysis of the entire system/process with an eye on changing the system to achieve the most efficient outcome. Requires intimate knowledge of the system being analyzed, including history.
2. **Linear Programming**
   Identifies the best combination of resources to obtain a desired outcome. Generally used when resources are scarce.
3. **Systems Analysis**
   An alternative selection method requiring an intimate knowledge of the systems being researched and how they fit together.
4. **Cost Effectiveness Analysis**
   This is a type of systems analysis that evaluates the cost of an alternative in relation to its effectiveness in achieving a state goal or outcome. Limited to comparisons of alternatives that are intended to address the same singular goal.
5. **Cost-Benefit Analysis**
   This analysis is a cost effectiveness analysis that permits comparisons across alternatives and multiple goals. It is discussed elsewhere in these notes.
6. **Fiscal Impact Analysis**
   A type of cost-benefit analysis that focuses on government. The costs and benefits are limited to the governmental unit specifically, instead of the community as a whole.
7. **Modeling**
   An on-paper simplification of a complex issue to describe and/or analyze a problem. Forces the consideration of relationships between problems and systems (i.e. the big picture).
8. **Simulation**
   An experiment done in a scientific manner or lab situation. Similar to a model, but is for situations too complex for mathematical computations or diagramming.
9. **Decision Analysis**
   Construction of a decision tree that links related sequential decisions and possible outcomes.
10. **Political Analysis**
    The human factor in decision-making, this analysis attempts to make objective the subjective elements of a system. Generally a tree or map of the political players and their relationships with relevant stakeholder issues identified.
11. **Scenario Writing**
    A descriptive narrative of possible paths that each alternative may take, ranging from the implausibly positive to the nauseatingly negative.
12. **Surveys**
    A poll of a relevant constituency to ascertain opinions and other relative data to formulate problems, alternatives, and solutions.

13. **Quick Thinking**
    This is not the on-your toes thinking while undergoing questioning at a public meeting. This is the intuitive empirical knowledge most planners have already simply applied to the process. We often have more answers ready than we realize, but we also need to know what we don't know before moving ahead on incorrect assumptions.

Communication Skills

PREPARATION

1. The **work area** for preparation of either a written or an oral report must be well-organized. Planners deal in arrangement of landscapes, but often times neglect the arrangement of space in their own offices.
2. Be sure all **tools, reference materials, and notes** are organized/arranged in a manner that allows efficient execution of the task. Don't forget "refills" of exhaustible supplies.
3. Include a "scratch area" in your preparation space to record **new ideas** that often time occur during the preparation of reports.
4. Most people write best in seclusion. Set your preparation environment in a manner that will **control interruptions** so that the task can be accomplished.
5. Include about three examples for each point to be made.
6. Have others **review** the report. You yourself should let it lie 3-7 days before looking it over again. This will make it "fresh" and will allow you to pick up on mistakes.

AUDIENCE

1. The purpose of written and oral reports is to **communicate ideas**. If you are not able to communicate, you have failed in your task.
2. Most presentations and reports are given within the following **parameters**:
   - Keep the language in the active voice
   - Written reports work better in the third person.
   - Choose a tense and stick with it. Past tense is generally used when presenting findings, but many plans –by their nature – use present and future.
   - Do not be overbearing and rigid. There are always alternatives.
3. A private audience generally allows more freedom and creativity.
4. A public report must be respectful of those it is reporting on as well as those receiving it
5. Always allow room for questions

PRESENTATION

1. The final version should be **well polished** and the author **well-versed** in the topic(s).
2. The author/presenter should be **aware of the audience**. In an oral presentation, efforts should be made to engage the audience in the presentation.
3. **The subject is expressed through the spoken or written word**, not the author. Therefore choose words wisely.
4. Take criticism cheerfully, but defend firmly.

PROMOTING THE PLANNING PROFESSION

1. Why Plan?
   "Planning directly affects our physical environment and in doing so influences our quality of life and general well-being. Development of land makes a big difference to how we feel about our neighborhoods, from the uses allowed in a particular area (like housing, retail or industrial) to the design of a building, to the amenities that may be provided as part of a development, such as open space and children's play space. It is important to get involved early on in the planning process, so that you know how to influence it and make your voice heard. Being involved will allow you to hear about and influence proposed changes to your neighborhood before decisions are made." (RTPI)

2. What is Planning?
   - "A predetermined course of action." (Preston LeBreton)
   - "Visualizing a better future and going after it." (Bruce McDowell)
   - "The conservation of life and economy in the system of developing land." (Thomas Adams)
   - "The deliberate social or organizational activity of developing an optimal strategy of future action to achieve a set of desired goals, for solving novel problems in complex contexts, and attended by the power and intention to commit resources and to act a necessary to implement the chosen strategy." (Ernest Alexander)
   - "Works to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations." (American Planning Association)
   - "The scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, health and well-being of urban and rural communities" (Canadian Institute of Planners)

Intergovernmental Relations

TYPES OF PLANNING AGENCIES

1. **The Planning Department**: Here, the planning agency is a department within the municipality's executive branch. The planning director reports to the municipality's chief executive. The planning commission merely has an advisory role.
2. **The Independent Planning Commission**: This is the traditional planning agency form. The planning commission members are appointed by the governing body or the chief executive. The agency's staff is solely responsible to the planning commission.
   - Independent planning commissions were intended to isolate planning from politics. However, Robert Walker's 1941 book *The Planning Function in Urban Government* argued that planning should be closer to the municipality's executive branch. Walker felt that independent planning commissions were too removed from the executive to be effective.

3. **The Community Development Commission**: In this form, planning, code enforcement, economic development, and housing activities are grouped together in an agency that is similar to the "planning department" discussed above. Although planning is more closely linked to implementation in this form, economic development concerns often co-opt planning.

4. **Separate Line and Staff Departments**: The three forms above contain both line and staff functions. This form separates these functions. The staff planning department performs policy analysis for the governing body, the chief executive, and the other municipal departments. The line planning department performs subdivision reviews, zoning ordinance amendments, and code enforcement.
5. **Combinations or variations of the above**: Although these were the only four forms described by Louise Mercuro, one can easily think of planning agencies that are combinations or variations of these forms.

PLANNING AGENCY SUB-UNITS

1. There are advantages to breaking a planning agency into departments or "sub-units."
   - It promotes efficiency by clarifying individual responsibilities and developing individual expertises.
   - Clients can more easily identify the staff members that are relevant to their concerns.
   - Interruptions to long-range planning activities can be minimized.
2. However, there are disadvantages to breaking a planning agency into departments or "sub-units."
   - It can reduce flexibility.
   - Isolated staff members may lose a comprehensive view of the agency's role.
   - The agency's organization may begin to dictate its work program.

3. Planning agencies are most often divided into departments or "sub-units" by…
   - Function (e.g., transportation planning, land use planning, CDBG, subdivision reviews)
   - Process (i.e., the steps necessary to the agency's work, such as research and development or demographic analysis)
   - Time (e.g., current planning, long-range planning)
   - Area (i.e., staff members are assigned to geographic areas within the involved municipality)
   - Combinations of the above

STRATEGIC PLANNING

1. According to page 405 of *The Practice of Local Government Planning*, "strategic planning, as it is used in the private sector and should be used in the public sector, is a plan *for the organization*…" and not for the municipality as a whole. However, many municipalities use strategic planning in place of the traditional comprehensive planning process. Others simply import elements of strategic planning into traditional planning.
2. *The Practice of Local Government Planning* says that strategic planning can be seen as one of the three levels of planning that are present in all management systems. In this view of management…
   - *Strategic planning* sets goals, objectives, and policies for reaching those objectives
   - *Management planning* evaluates specific programs on the basis of how they conform with the above policies (budgeting falls here)
   - *Operational planning* (or operational control) is concerned with managing the above programs
3. Although there are many different models of strategic planning, *The Practice of Local Government Planning* displays the following one on page 406.

- Scan the environment. Identify key factors and trends that are important to the future. Determine how external forces will influence events. Identify what the organization's mandates are.

- Select key issues based on the above scan.
- Set "mission statements" or broad goals that will establish the direction of the strategy development process.
- Conduct external and internal analyses. Look in depth at outside forces that will affect the achievement of the above goals. Identify the organization's strengths (i.e., resources), weaknesses, opportunities, and threats.
- Develop specific goals, objectives, and strategies for each key issue based on the above broad goals and analyses.
- Develop an implementation plan that specifies timetables, resources, and responsibilities.
- Monitor, update, and scan the implementation process and the changing environment. Strategic planning is an ongoing activity.

THE PLANNING DIRECTOR

1. According to page 428 of *The Practice of Local Government Planning*, the planning director's leadership role within a planning agency is composed of "at least" the following four elements.

   - The communication of the agency's goals to subordinates
   - The motivation of subordinates
   - The coordination of subordinates
   - The reporting of the agency's work and accomplishments
2. *The Practice of Local Government Planning* lists the following strategies that planning directors may use in dealing with elected officials or decisionmakers.

   - **The technical expert strategy**: Here, the director promotes planning as an objective, politically-neutral, technical tool that decisionmakers can use to help them understand issues and make decisions. It presumes that the agency's staff is highly skilled, and that the decisionmakers value technical information.
   - **The confidential adviser strategy**: Here, the director establishes relationships with decisionmakers that are largely based on personal trust and a successful track record.
   - **The innovator strategy**: Here, the director develops a reputation as a highly visible innovator who often advocates solutions that are bold or that haven't been previously considered. The decisionmakers then develop strategies by observing how the community reacts to the director's ideas.

OFFICE ADMINISTRATION

1. The term "**development management"** refers to an organized attempt to build stronger relationships between a planning agency and the outside officials, administrators, departments, authorities, and other governmental units that are relevant to the planning agency's functions.
2. There are two kinds of governmental functions. **Line functions** provide services directly to the public (e.g., fire and police departments). **Staff functions** provide
3. **Management By Objective (MBO)** is a management model. The planning director and his subordinates set organizational goals and objectives, which are then transformed into performance measures for individual employees. Thus, it is a collaborative goals setting process (i.e., it is not purely hierarchical).

CROSS-JURISDICTIONAL ISSUES

1. The 701 Program (see Functional Topics for more on 701) provided state assistance specifically designed to assist local governments with planning issues. This encouraged the creation of state Departments of Community Affairs throughout the nation. The departments, in whatever name and form they took, performed two tasks:
   - Technical assistance to the smaller or un(der)staffed communities
   - Implementation of state planning policies at the local level

2. These issues also become apparent between levels of government, such as between a state and a locality, or between the federal government and a state.

3. Relationships between governments at the same level need to be fostered at multiple levels within each jurisdiction. Elected officials need to communicate on policy matters, and appointed officials or employees need to coordinate administrative and technical matters. This can sometimes be difficult, especially when a sour history exists between the communities. The planner's obligation to the public good mandates that these differences be set aside if they get in the way of advancing a legitimate public interest.

Project & Program Management

SCHEDULING TECHNIQUES

1. These techniques are used to organize the execution of projects. They are often involved in capital improvements programming.
2. The following three techniques are the most commonly addressed in planning literature.
   - **Gantt Charts**: In a Gantt Chart, the various tasks involved in a project are listed on the y-axis, and the time period in which the project as a whole must be completed is depicted on the x-axis. The time period allotted to each individual task is represented as a horizontal bar. Thus, Gantt Charts organize and allocate time among these tasks.
   - **PERT**: A PERT system graphically depicts the relationships among a project's constituent tasks as links in a web. PERT systems are capable of reallocating the available resources (e.g., time, labor, materials, etc…) among these tasks (where feasible) to keep the project on-time and on-budget. A probability technique – which involves estimations of the most optimistic, pessimistic, and realistic resource

amounts needed to complete each task – is used to identify the constraining relationships among the tasks that will dictate the resource requirements of the project as a whole.

- **Critical Path Method (CPM)**: CPM is used to determine the "optimal solution:" i.e., the allocation of resources (e.g., time, labor, materials, etc…) among a project's constituent tasks that will complete the project using a minimal amount of each resource. CPM accomplishes this by estimating – for each task – a *crash cost* (finishing the task in a minimum amount of time by using unlimited labor and materials) and a *crash time* (finishing the task with minimum amounts of labor and materials by using an unlimited amount of time). CPM can be used within a PERT system.

3. Computer software is often used to implement these scheduling techniques.

Public Interest

Ethics

AICP CODE OF ETHICS

The AICP Code of Ethics is a document that contains principles, rules, and procedures governing ethical behavior in the practice of planning. It is divided into three parts:

1. Principles to Which We Aspire state ideals that are too subjective to form the basis for the finding of ethical misconduct. This section is itself divided into three parts.
   - Responsibility to the Public
     - Serve the public interest.
     - Be concerned for the rights of all affected parties.
     - Provide opportunities (to others) for meaningful impact.
     - Pay attention to the interrelatedness of decisions.
     - Be keenly aware of the long-range consequences.
     - Seek social justice.
     - Deal fairly.
     - Promote excellence in design
     - Endeavor to conserve and preserve the natural and built environment.
   - Responsibility to our Clients and Employers
     - Exercise independent judgment.
     - Avoid conflict of interest – even the appearance of a conflict.
     - Accept decisions unless the course of action is illegal or plainly inconsistent with our primary obligation to the public interest.
   - Responsibility to our Profession and Colleagues
     - Protect and enhance the profession's integrity.
     - Educate the public.
     - Describe and comment on the works of others.
     - Share the results and experiences.
     - Examine theory.
     - Contribute time and resources to professional development.
2. Rules of conduct have been established and are intended to be enforceable with the potential for disciplinary action.
   - There are 25 points under the Rules of Conduct
   - Each addresses specific point a practicing planner may encounter during a typical career
   - The Rules help us in our Aspirations enumerated in the first part
   - The Rules are not situational.
3. The Procedures section describes complaint administration and enforcement. This section contains four basic parts.
   - Informal Advice is given on a one-to-one level by the Ethics Office and is not binding on the recipient
   - Formal Advice is also given on a one-to-one level by the Ethics Office and is binding on the recipient
   - Advisory Rulings are issued by AICP for the benefit of all certified planners
   - Administration of an Ethics Charge outlines the process and participants when formal charges are filed against a certified planner. Be sure to know the difference in the roles of the Ethics Officer and the Ethics Committee.

APA ETHICAL PRINCIPLES IN PLANNING

1. This statement was adopted by APA in 1992 and purports to apply to anyone engaged in the practice of planning. If focuses on three main areas.
2. It calls all those engaged in planning to seek the benefit of the public interest first and foremost when engaged in planning activities.
3. It calls all those engaged in planning to achieve high standards of integrity and proficiency so that public respect for the planning process will be maintained.
4. Finally, it calls all practitioners to a continually strive for personal and professional development within the field.

Social Justice (Multi-Cultural & Gender Issues)

SOCIAL JUSTICE

1. Social justice seeks to ensure all people have access to the public process. In seeking such, advocates take steps to ensure traditionally disenfranchised groups are included, particularly when policies and decisions may directly impact them.
2. Community action agencies and community interest groups give the disenfranchised a louder voice in public decision-making. This is done by enabling and presenting credible members representing the disenfranchised to the established leadership of a community.
3. Planners can help in social justice by doing one of the traditional, foundational roles of a planner – bring diverse groups of people together to work toward a common goal.
4. Planners should reach out to such people and hear with open ears. Worthwhile ideas for change and empowerment can be nurture and furthered into the mainstream.
5. Empowerment can be found in information and in networking. Planners can assist the disenfranchised in achieving both.
6. Social justice may include assistance in passing the torch to the next generation.

MINORITIES AND SUB-CULTURES

1. There are two traditional viewpoints on American culture. The first is the “melting pot,” and the second is the “salad bowl.” There is a sense in which both are accurate.
2. We are a melting pot because each culture represented in our society has contributed to the overall society as a whole. These elements have been fully blended into the mainstream and it is now difficult for most of us to discern their origins.
3. We are also a salad bowl because despite the overarching societal mores, distinct ethnic and cultural groups remain. There are the creoles in Louisiana, the many indigenous cultures that cling to identity, religious sects (Mormons and plain sects), and ethnic groups (Chinese, Latino, etc.). These sub-cultures need to be allowed to remain and be included in the overarching society without attempts at assimilation by the majority.
4. Accommodations may be appropriate in planning issues to deal with sub-cultural needs, such as cooking and eating habits, rituals, or structural elements. Like with the social justice issues listed above, planners must hear with open ears so the needs and concerns of a sub-cultural group can be heard and accommodated (as much as possible).
5. A sub-group gaining much attention in our nation now are immigrants (both legal and illegal) and their impact on society, culture, and economy.

Public Participation

FOCUS GROUPS

1. The use of focus groups as a planning public participation technique was inspired by their use in the advertising industry.
2. A focus group – which is usually a representative sample of a community – is assembled in an informal setting. Like visioning, a group leader is used to direct the discussions. Unlike visioning, the discussions are typically directed towards a few, specific subjects.
3. A focus group is often an inexpensive and fast alternative to a large-scale community survey.
4. However, a domineering participant can skew the responses of a focus group.

PLANNING CHARRETTES

1. A charette is a short, intense, collaborative process that is usually used to design projects, plan communities, and/or build consensuses.
2. A charette involves a small group of professionals and/or citizens working in an informal setting to produce a product. If the product is more professionally-oriented (e.g., a subdivision), then the group should be mostly composed of professionals. If the product is more consensus-oriented, then the group should be mostly composed of citizens.
3. There are five commonly used types of charettes.
   - • **Professional design charettes**: These are used to design projects. The involved group contains only professionals – such as planners, architects, landscape architects, and engineers.
   - • **Participatory design charettes**: A participatory design charette is identical to a professional design charette, except that the group works in the full view of the public.
   - • **Academic design charettes**: An academic design charette is similar to a professional design charette, except that it takes place in an academic setting.
   - • **Professional planning charettes**: A professional planning charette is identical to a professional design charette, except that it addresses general planning concerns instead of a specific project's design. In a professional planning charette, pubic participation typically consists of occasional meetings between the group and public officials or citizens.
   - • **Participatory planning charettes**: A participatory planning charette is entirely composed of citizens – with the sole exception of a professional facilitator. The facilitator typically drafts a summary of consensus points at the conclusion of the process.
4. A **"design-in"** – in which professional planners (1) teach citizens how to design and/or plan communities, and (2) help the citizens design a project or develop a plan – is a close relative of the charettes.

POLICY DELPHIS (I.E. THE DELPHI TECHNIQUE)

1. A delphi is used to develop a consensus between two or more groups that are in conflict.
2. The views of each group are presented in successive rounds of argument and counter-argument. The rounds gradually work towards a consensus. Questionnaires may be used with larger groups.

BRAINSTORMING

1. The classic brainstorming technique can be used to formulate goals and objectives, identify issues, develop strategies, select alternatives, and resolve conflicts.
2. This technique roughly works as follows.
   - A question is formulated and asked to a group.
   - Each member of the group writes down an answer to the question.
   - Then, each member of the group reads his or her answer in turn. Repeated answers are allowed, but discussion is not permitted at this point.
   - Then, each member of the group discusses the group's answers in turn.
   - Finally, the group prioritizes the answers.
3. The classic brainstorming technique places each group member on an equal footing. This makes it difficult for domineering personalities to skew the results.

FORCE FIELD ANALYSIS

1. Force field analysis – which is a variation of brainstorming – can be used to analyze and select policies and programs from a known group of alternatives.
2. Force field analysis roughly works as follows.
   - Alternative number one is presented.
   - Each member of the group lists his or her likes and dislikes concerning this alternative.
   - The complete set of dislikes is then prioritized by the group.
   - The group members then make suggestions on how they would overcome the highest priority dislikes.
   - Then, alternative number two is presented – and so on...

NOMINAL GROUP TECHNIQUE

1. The nominal group technique – which is also a variation of brainstorming – can be used to formulate goals and objectives, identify issues, develop strategies, select alternatives, and resolve conflicts.
2. The nominal group technique roughly works as follows.
   - • A question is formulated and asked to a group.
   - • Each member of the group answers the question individually.
   - • The group's answers are recorded and then prioritized by the group as a whole.

Negotiation & Coalition Building

NEGOTIATION

1. Negotiation starts well before the formal discussion. A planner must have built community trust and an honest reputation well beforehand to be successful.
2. Always remember that the planner's primary responsibility is the public interest, irregardless of situation, employer, client, or opponent.
3. A lofty goal for negotiation is to make your op-ponent a pro-ponent. This does not always come about, but working with people to reach an amicable solution often brings ownership of the project no matter what side of the table the person originally sat down on.
4. Remember Kenny Rogers: You've got to know when to hold 'em. Know when to fold 'em. (Hopefully you never need to walk away, let alone run!)
5. Often, a public-sector planner will have "the code" or "the regulation" on "his side." This may be true, however a good negotiator does not hide behind law, but promotes the

concepts embodied in the law to the other party so that the other party 1) sees why the requirements are there and 2) seeks a solution in conjunction with the planner.
6. Some advocate the development of a "communications plan" which contains goals and identifies strengths and weaknesses of the planner(s) it covers.
7. When entering negotiations, it is helpful to know background on the site and the project (of course) as well as those presenting it and those opposing it. Getting to know the people involved can assist the planner in engaging the "right" key phrases and concepts to gain the confidence of the participants in the planner as well as in the opposing side.
8. Negotiating as a facilitator allows planner to quell rumors and community misinformation before it gets too far out-of-hand. Again, this takes familiarity with all aspects of the physical site and the people involved.
9. Don't reinvent the wheel. While each negotiating session is unique, it is possible for planners to have some pre-developed messages "in the back pocket" to assist in the negotiations. APA's "building great communities" theme is an example.
10. A code that is nothing but English sentences preceded by a section number makes for a poor presentation to all involved in the process. While the code itself may need to be that way, nothing prohibits appendices which fully explain and illustrate points, purposes, goals, and examples that the code at hand it attempting to achieve.
11. Remember that planning is more than code administration.

COALITION-BUILDING

1. Like negotiating, coalition-building begins well before an issue comes to the forefront.
2. Identify the leadership of the community. This goes beyond the elected and appointed officials (although they are certainly among them). Think of the local community interest group, the Chamber, the business community, and neighborhood associations. Think of religious leadership, organizations like the local NAACP, the Realtors Association, and non-profit organizations engaged in economic development, redevelopment, or social assistance. All these have valuable perspectives to bring to the table. Also (for those in the public sector) don't forget to look outside the municipal boundaries.
3. Once community leadership is identified, develop and maintain positive relationships with each one.
4. Like in negotiation, the planner's power lies in persuasion and bringing diverse groups together to achieve a common goal.
5. Reach out to disenfranchised people and/or groups in an attempt to bring them into the process. Be sure everyone affected has opportunity to participate.
6. Be a facilitator. Remain as neutral as possible. Allow the community to determine its goals and work through the problem, with your professional assistance.
7. Maintain interest throughout any contention that may arise. An understanding of the project and people will go a long way in having this happen. If a particular group is negatively affected in a large way, seek ways to balance the equation – allowing the coalition of people to find and buy into the solution.
8. Maintain the coalition and relationships through thick and thin so whenever an issue arises, good relationships establish the foundation of the problem-solving process.