Environmental Regulations & Housing Costs

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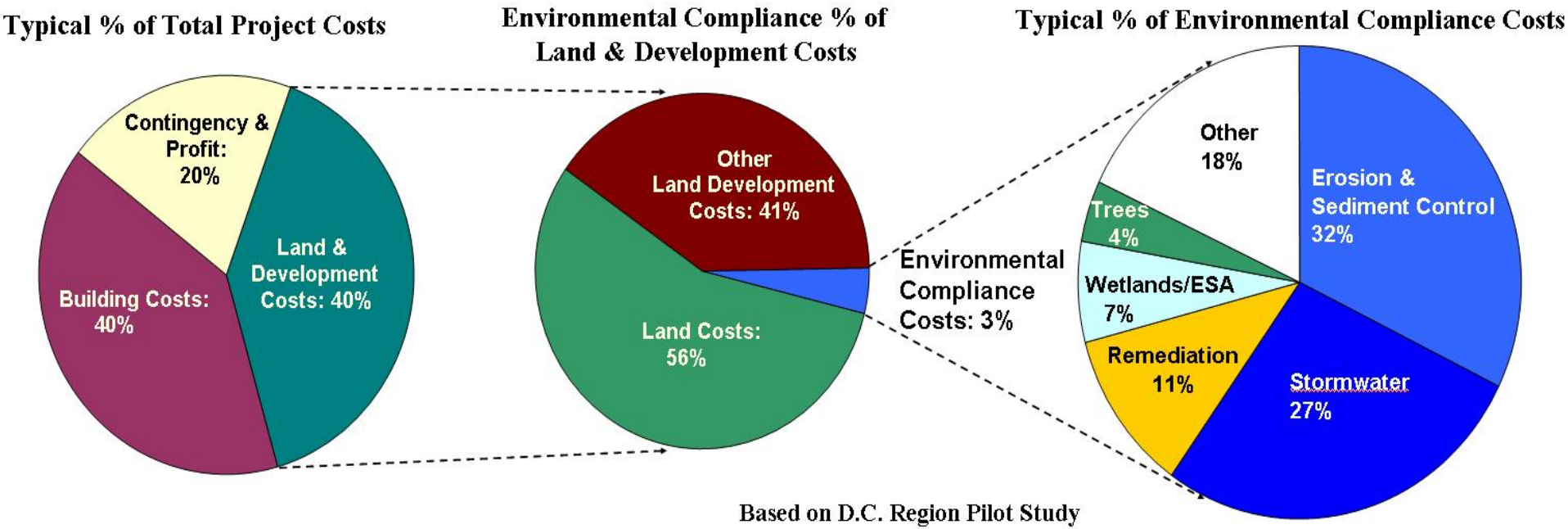
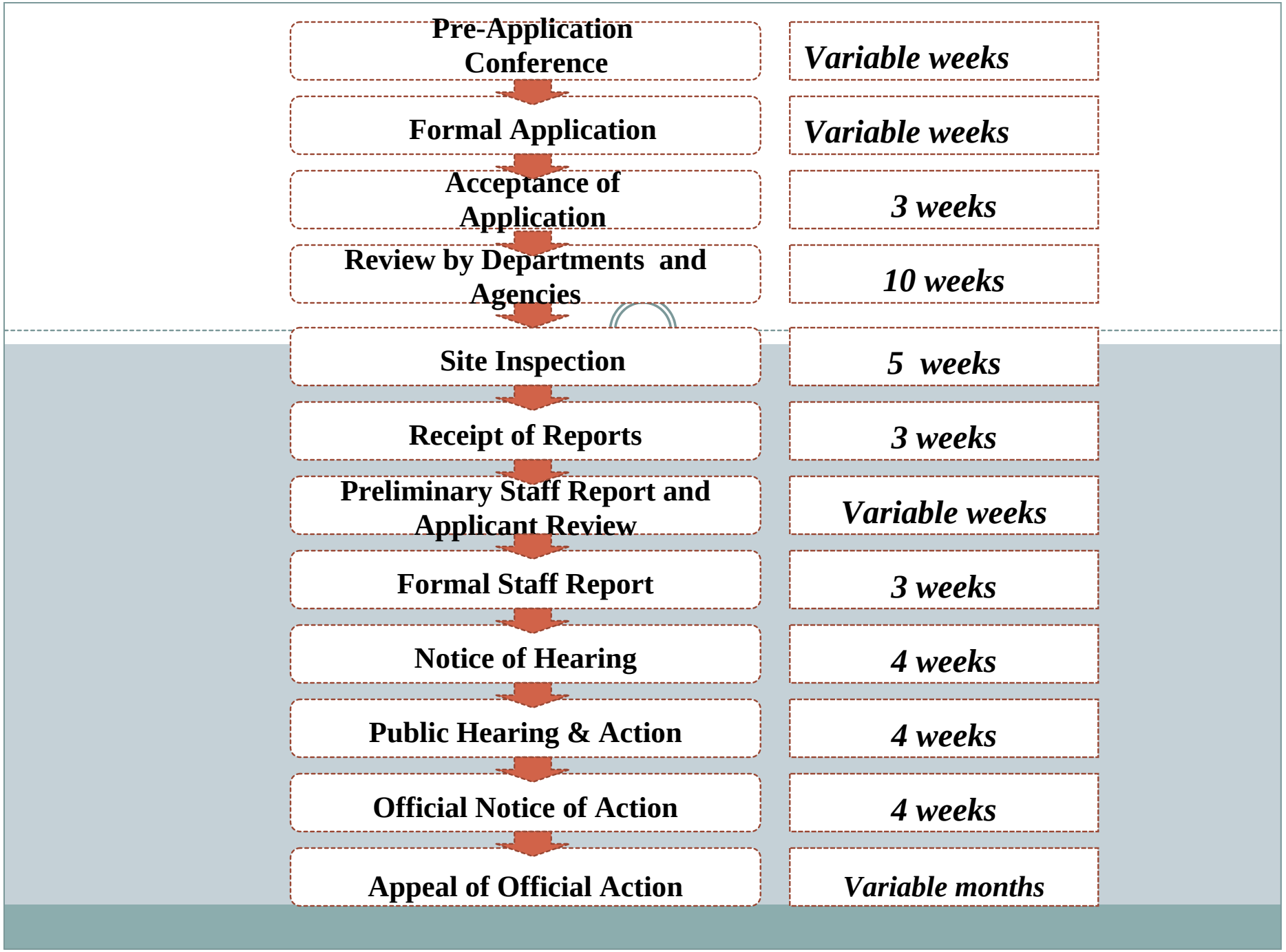
Environmental Compliance Costs in Land Development



Based on D.C. Region Pilot Study

The Structure of the Land Conversion Industry and the Activity of Predevelopment

	Types of Land Investors				
	Buyer of Raw Land	**Land Speculator**	**Predeveloper**	**Land Developer**	**Builder/End User**
Major Function	Begins conversion	Holds the property waiting for growth to approach	Analyzes market and plans development; clears all regulatory hurdles	Installs utilities; completes subdividing program	Builds structures for sale, rent, or own use; may employ general contractor
Typical Financing	Noninstitutional		May attract institutional investment on selective basis	May be able to obtain construction loans and long-term real estate investors	
Typically Sells To	Land speculator	Other speculators. Last in line to sell to some type of developer	Land developer or end user	Other (smaller) builders or end users	
Typical Length of Tenure	10+ years	8–10 years	2–5 years	1+ years	Indeterminate


Pre-Application Conference
Variable weeks
Formal Application
Variable weeks
Acceptance of Application
3 weeks
Review by Departments and Agencies
10 weeks
Site Inspection
5 weeks
Receipt of Reports
3 weeks
Preliminary Staff Report and Applicant Review
Variable weeks
Formal Staff Report
3 weeks
Notice of Hearing
4 weeks
Public Hearing & Action
4 weeks
Official Notice of Action
4 weeks
Appeal of Official Action
Variable months

Study Area

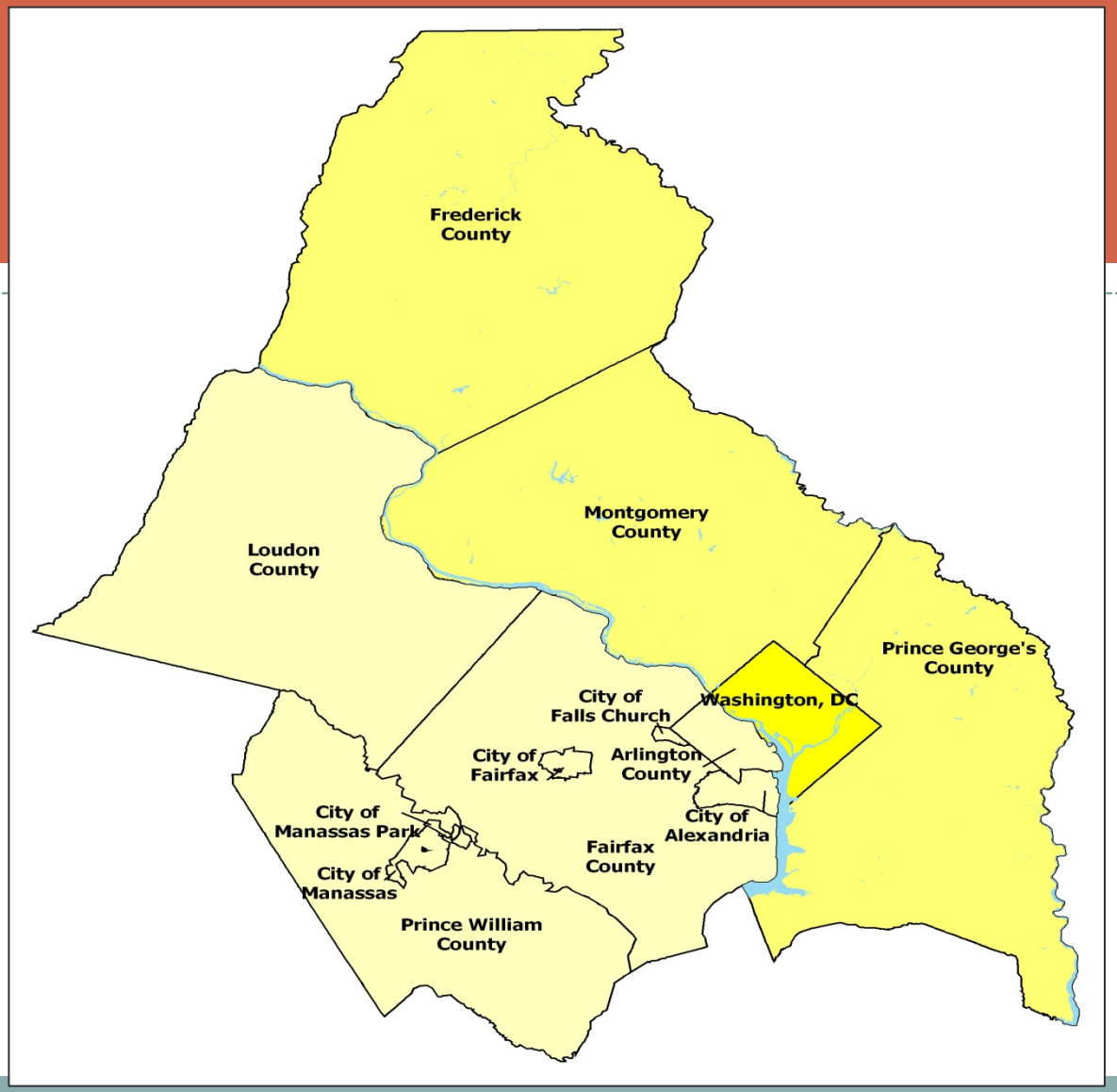
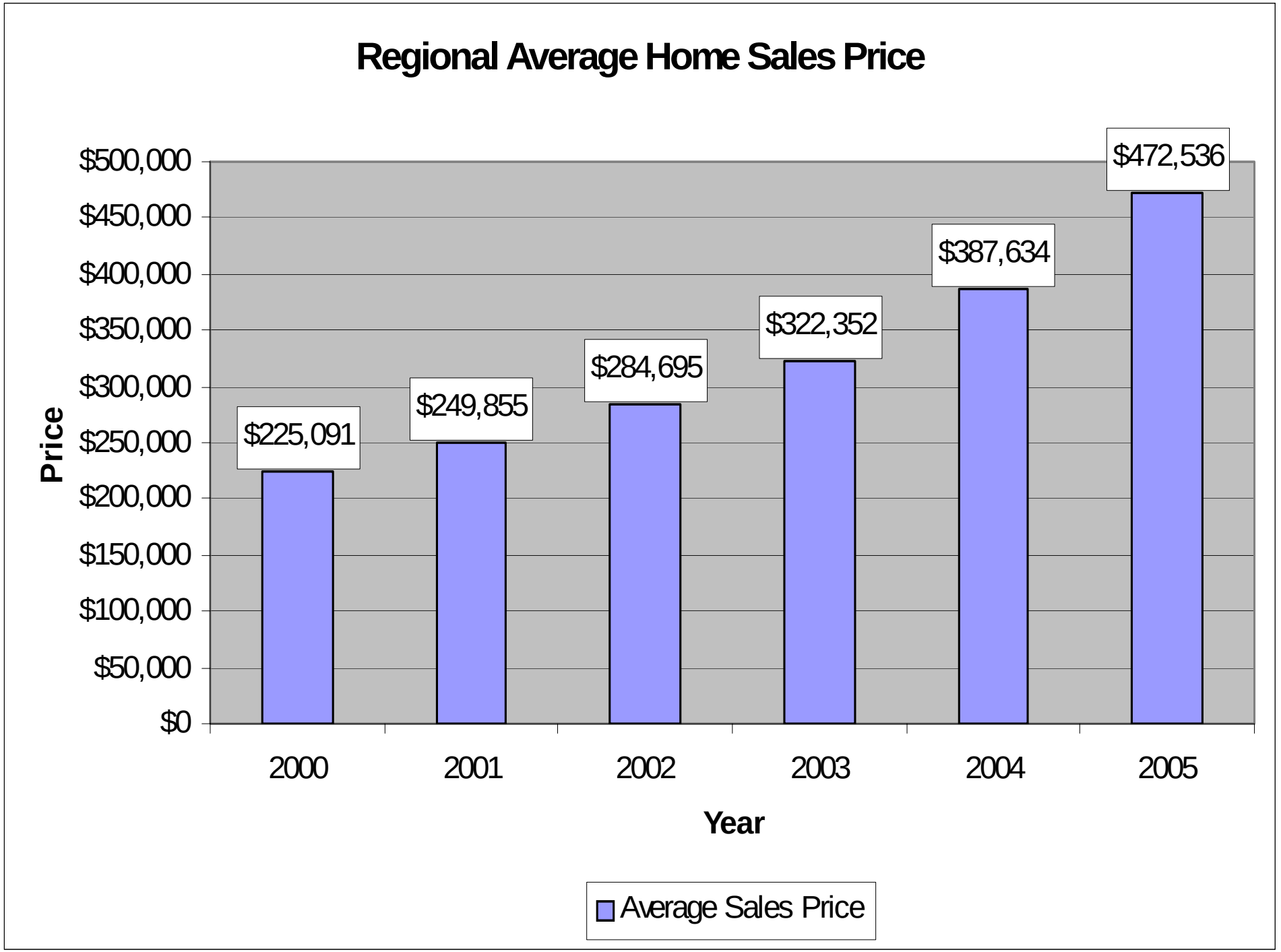
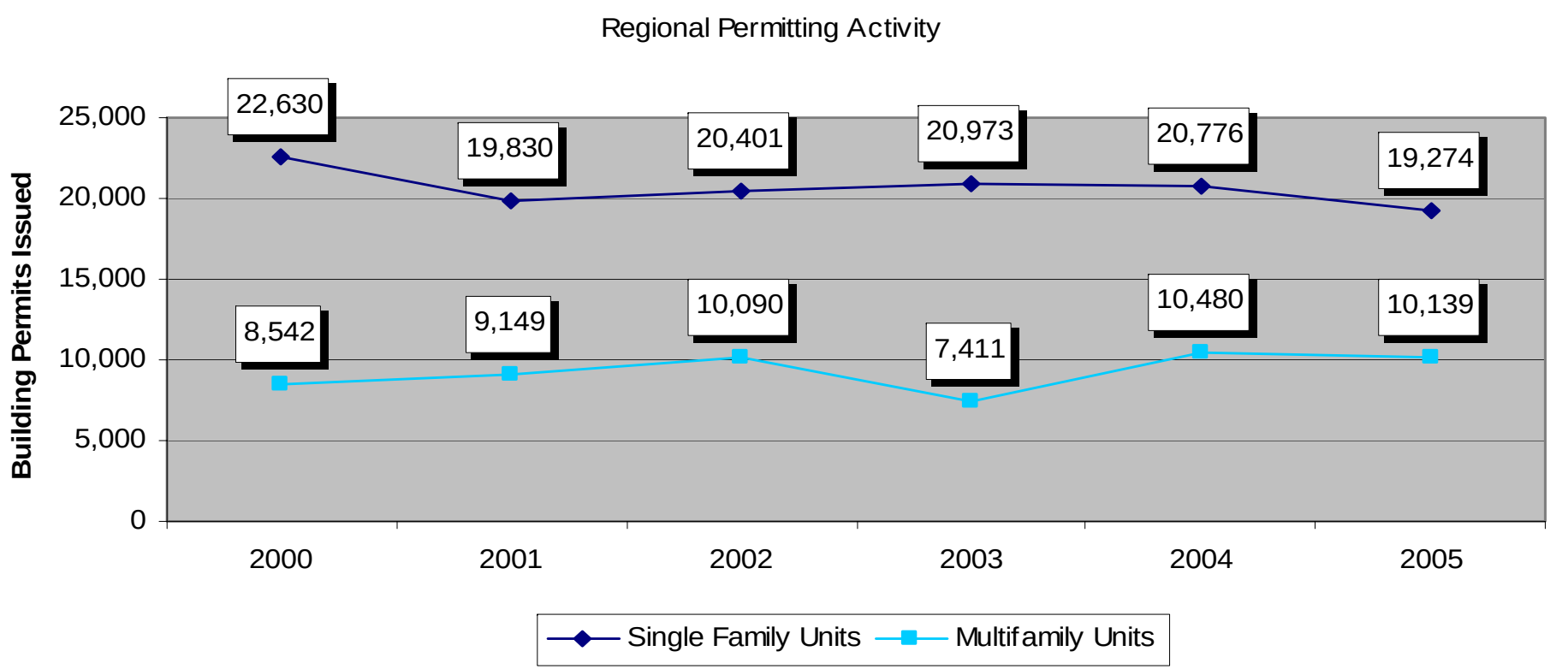


Figure 4-1: Metropolitan Washington, DC


Regional Average Home Sales Price
$500,000
$450,000
$400,000
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
Price
$225,091
$249,855
$284,695
$322,352
$387,634
$472,536
2000
2001
2002
2003
2004
2005
Year
Average Sales Price



Source: U.S. Census Bureau

Table 3.1 Distribution of Subdivision Improvement Costs, 1975

Cost Category	*Cost*	*Share*
Clearing and grubbing	$381	6.1%
Grading streets	$392	6.3%
Street pavement	$731	11.7%
Grading, seeding lots/right of way	$768	12.3%
Sanitary sewer	$923	14.8%
Water distribution	$531	8.5%
Curbs and gutters	$679	10.9%
Driveways	$700	11.2%
Sidewalks	$212	3.4%
Street trees	$306	4.9%
Storm drainage	$619	9.9%
Total	$6,242	
Environmentally related costs	$925	14.8%

Figures in 2005 dollars using data from *Engineering News & Record*'s twenty cities fourth-quarter index. *Source:* National Association of Home Builders (1976a, 135).

Table 3.4 Developers' Estimate of Approval Time for Zoning Relief, 2002

Procedure	*Time Required*	*Percentage of Developers*
Variance or special exception	<1 month	0.0%
	1–2 months	28.6%
	3–4 months	32.9%
	4+ months	38.5%
	Mean	3.9
Rezoning	<1 month	0.0%
	1–2 months	6.8%
	3–4 months	23.3%
	4+ months	69.9%
	Mean	5.1
Unweighted Combination	Mean	4.5

Weighted average incidence calculated by authors based on 0 months, 1.5 months, 3.5 months, and 6 months for each category of percent of time applied for zoning relief, respectively, times the incidence for 2002, respectively. *Source:* Ben-Joseph (2003).

Table 3.5 Estimates of the Excessive Subdivision Regulatory Cost Barriers for All Building Permits Issued for Detached Single-Family Dwelling Units in the Nation, 2004

Cost Estimates Variable	*Aggregated Analysis, Share of Excess Cost Burden*		*Disaggregated Analysis, Share of Excess Cost Burden*	
	Figure	*Percentage*	*Figure*	*Percentage*
National cost of excessive regulation	$19,215,338,860		14,603,018,827	
Lot size	$12,552,280,392	65.3%	11,137,670,615	76.3%
Lot width	$1,811,355,507	9.4%	1,551,371,592	10.6%
Front setbacks	$797,956,481	4.2%	743,335,966	5.1%
Floor area	$3,291,995,430	17.1%	872,800,196	6.0%
Pavement	$223,586,056	1.2%	96,777,852	0.7%
Sidewalk	$216,734,720	1.1%	36,107,707	0.2%
Sidewalk width	$50,334,294	0.3%	21,564,900	0.1%
Off-street parking	$76,312,500	0.4%	73,915,367	0.5%
Open space	$194,783,479	1.0%	69,474,632	0.5%
Per single-family dwelling unit	$11,910		$9,051	
Mean new home price	$244,000	4.9%	$244,000	3.7%

Source: Adapted from NAHB (2007).

Table 4.2 Fairfax and Montgomery Counties Compared

Category	*Fairfax County*	*Montgomery County*
Population 1990 (total)	818,584	757,027
Population 2000 (total)	969,749	873,341
Population 2005 (estimated)	1,006,529	927,533
Median household income in 2004	$88,133	$82,971
Single-family detached homes in 2004	194,453	184,085
Attached residential units in 2004	177,945	168,634
Total housing units in 2004	380,637	353,051
Median new home sales price, 2005	$807,266	$759,933
Median new home sales price, 1997	$389,747	$343,295

Source: Authors' analysis of data from U.S. Bureau of the Census 2000 for Fairfax County, Virginia, and Montgomery County, Maryland.

BOX 4.1 Research Goals and Hypotheses

The goal of the case study is to generate insight into the impacts of environmental regulations (and the systems used to support them) on the housing industry and specifically on the cost of housing units. The following are the case study hypotheses.

1. **Environmental Compliance Costs.** Drawn from the academic literature, the research team investigated two hypotheses relating to environmental compliance costs:
   - Environmental compliance costs include costs for additional environmental plans and studies and costs for physical measures for mitigation, restoration, and protection, and that these combined costs are a significant percentage of the costs of development and the price of housing.
   - The compliance costs of physical measures for environmental mitigation, restoration, and protection carry a higher cost commitment than the preparation or implementation of plans to protect these resources.
2. **Costs of Environmental Review and Approval Processes.** Drawn for the academic literature, the case study investigated three hypotheses relating to development review processes:
   - Increased levels of environmental regulations require more time and resources for development review and permit approvals.
   - The longer it takes to navigate the development review process, the greater the costs to the home builder. These costs are transferred to the customer in the form of higher housing prices.
   - Environmental regulations are more effective and less costly when the administrative processes are streamlined and provide greater clarity and certainty to both developers and the staffs of reviewing and approving agencies.

Table 4.23 Comparing Seven Project Studies

Feature	Fairfax 1	Fairfax 2	Montgomery	Loudoun 1	Loudoun 2	Prince William	Average
Land-Use Decision	*Rezoning*	*Rezoning*	*Rezoning*	*By-Right*	*Rezoning*	*Rezoning; Plan Amendment*	
Acres	300	50	100	200	200	100	
Units	700	100	250	200	300	200	
ADUs	20–100	20	30		AHTF		
Percentage of open space		30%		20%			
Environmental Compliance Cost (in millions)	$3.96	$1.10	$1.52	$3.16	$1.14	$1.83	
Percentage of erosion/sedimentation	42%	20%	15%	28%	39%	47%	32%
Percentage of stormwater	25%	14%	54%	44%	9%	16%	27%
Percentage of remediation	10%		20%	13%	7%	12%	11%
Percentage of wetlands/ESA	8%	5%	5%	13%	8%	8%	7%
Percentage of tree/forestry	<1%		5%		19%	<1%	4%
Percentage of noise attenuation	10%	60%				12%	13%

Table 4.23 Comparing Seven Project Studies (*continued*)

Feature	Fairfax 1	Fairfax 2	Montgomery	Loudoun 1	Loudoun 2	Prince William	Average
Land-Use Decision	*Rezoning*	*Rezoning*	*Rezoning*	*By-Right*	*Rezoning*	*Rezoning; Plan Amendment*	
Percentage Other	4%	1%	1%	2%	18%	5%	5%
Environmental cost per unit	$5,650	$11,000	$6,000	$15,800	$3,800	$9,150	$8,600
Environmental cost share of land plus development cost	1.9%	3.3%	2.3%	5.3%	1.2%	3.6%	2.9%
Imputed lot cost[a]	$187,250	$205,500	$167,500	$187,250	$197,500	$156,750	$183,500
Environmental cost share of finished lot cost	4.7%	3.0%	5.0%	3.6%	8.4%	1.9%	5.8%
Approvals	Concurrent	Concurrent	Concurrent	Concurrent	Concurrent	Concurrent	
Time to approval	22	18	28	27	2	29	24
Proffers	Stream monitor; BMPs; archeological review; off-site conservation easement	Tree preservation	None in MD	None for by-right	Tree preservation; forest cover; archeological; one review; open space	Funds to monitor, E&SC, tree preservation; on housing fund	

[a] The builders also built homes, so the finished lot price is not provided directly. This figure is based on a 25 percent finished lot-to-home sale ratio, which is conservative and will have the effect of increasing the relationship of environmentally related costs to finished lot cost.

Table 6.1 Most Significant Environmental Regulations with Potential Impact on Residential Development Costs[a]

	Denver	*Dallas*	*Tucson*	*MD-VA*
Stormwater (including erosion and sediment control)	X	X	X	X
Remediation				X
Wetlands	X		X	X
Endangered species	X		X	X
Tree/forestry		X		X
Noise attenuation				X
Floodplain		X	X	X
Riparian areas			X	
Hillside/ridge preservation			X	
Average new home cost	$329,967	$179,000[b]	$245,804	$734,000
Typical time to approval (including zoning decision)	12 to 28 months	18 to 24 months	12 to 24 months	~24 months

[a] An "X" in the box indicates that the participants identified this as a significant environmental regulation. Other environmental regulations are present in each market, but were not identified as having a significant impact on costs.

[b] The average new home cost for Dallas was not available. This number represents the median price. See text for more details on housing costs in each area.

Source: Authors' compilation of pilot study research.

Clear standards are those that enable experts in the field to know what is meant by the standard—such as stormwater retention based on a one-year storm event extending one hour.

Objective standards would show how the stormwater retention may be achieved through design and choice of materials. Ideally, if the clear and objective standard is met, there may be no discretion by local decision makers to add further requirements that address the issue.

Expert review, provided by both the applicant and the local government, would also be available to ensure application of the standard.

1. Understanding the true costs of regulatory process barriers to the availability and affordability of housing
2. Understanding the effects of regulatory practices for areas in addition to regulation of building safety
3. Understanding lesser-studied aspects of regulatory processes, such as estimating the effects of citizen opposition to housing or the effects of fragmented regulatory structures
4. Understanding the balance among the economic, social, and environmental benefits of environmental regulations and the cost impacts on housing. Do the costs of regulations exceed the benefits they provide?

Research in each of these areas would close important gaps in information and create a more complete body of knowledge on the relationship between regulation—especially environmental regulation—and housing costs.

Myths and Realities

Myth *Environmental review increases permitting time, creates delays, and adds significantly and excessively to housing costs.*

Reality. All regulations add *something* to housing costs. Building codes protecting public safety adds costs.

Regulations have little impact on housing prices relative to market forces and other policies (fiscal, infrastructure, etc.).

Environmental regulations probably have a smaller influence on housing costs that zoning, subdivision rules, building codes, impact fees, and the like.

In the Washington, D.C., area, the cost of environmental compliance per unit was less than 1 percent of the unit sales price.

HUD research by NAHB shows that density, lot size, setbacks, and improvement standards add an estimated 4 to 5 percent to housing costs on average.

Myths and Realities

Myth *The impact of the environmental regulatory process on housing costs has increased during the past three decades.*

Reality. The impact on housing costs that arise from environmental regulations has not changed much in thirty years—and might have gone down—despite the fact that the number and rigor of environmental regulations have increased between the latter third of the twentieth century and into the twenty-first

Myths and Realities

Myth *The permitting time for residential subdivisions has increased significantly since the 1970s.*

Reality. Between 1976 and 2002, the average permitting time for residential subdivisions increased by only two months (from 15 to 17 months).

Whether any of this increase is attributable to environmental regulations cannot be determined.

The modest increase in permitting time comes despite reasonably expansion of government review at all levels and the expanding abilities of citizens to delay permitting.

Truths

Truth. As regulations of all kinds and especially environmental regulations have increased so has the rigor of development review for environmental effects. That housing costs have not risen associated with this is a testament to:

Technology making professionals more efficient and environmental improvements less costly over time.

Efficiency of technical analysis conducted principally by experts representing developers.

Developers have ***more knowledge*** about development impacts on the environment than in the 1970s, and are better able to anticipate and address them.

Due diligence of anticipated development process is more rigorous.

Land-purchase contracts include ***price reductions*** for mitigation and exactions.

Trusted environmental experts ***cut through*** NIMBYism.

Environmental regulations add the very kind of process ***certainty*** that developers need.

Technology and the expanding environmental consultant profession have likely ***reduced costs*** associated with environmentally related improvement and investigations.

Next Steps

Catalog the nature of particular environmental concerns in specific areas

Identify and specify, through descriptions, drawings/diagrams, and other means, the appropriate range of development responses to each of the environmental concerns.

Frame the regulatory review process needed to address each concern, including the extent to which discretion in addressing each area of concern may be needed even if the design solution posed in the second step is posed by the developer, and determining the reasonable time needed to provide reasonable public review.

Determine where multiple environmental concerns may be addressed by the same review function, discipline, and group of design solutions.

Characterize an overarching administrative process that implements the above four elements in a reasonably efficient manner that provides discretion for unusual or complex cases.

Facilitate further streamlining of processes possibly through stronger federal involvement, such as incentives for states and localities to meet federal guidelines of approval time-limits.