

Capitol Master Plan

Capitol Buildings Planning Commission

October 11, 2011



Deferred Maintenance:
Asset Management Best Practices

Section 15-10-2 NMSA 1978 (SB 220)

6 (2) review proposed lease-purchase
7 agreements pursuant to Section 15-10-2 NMSA 1978;

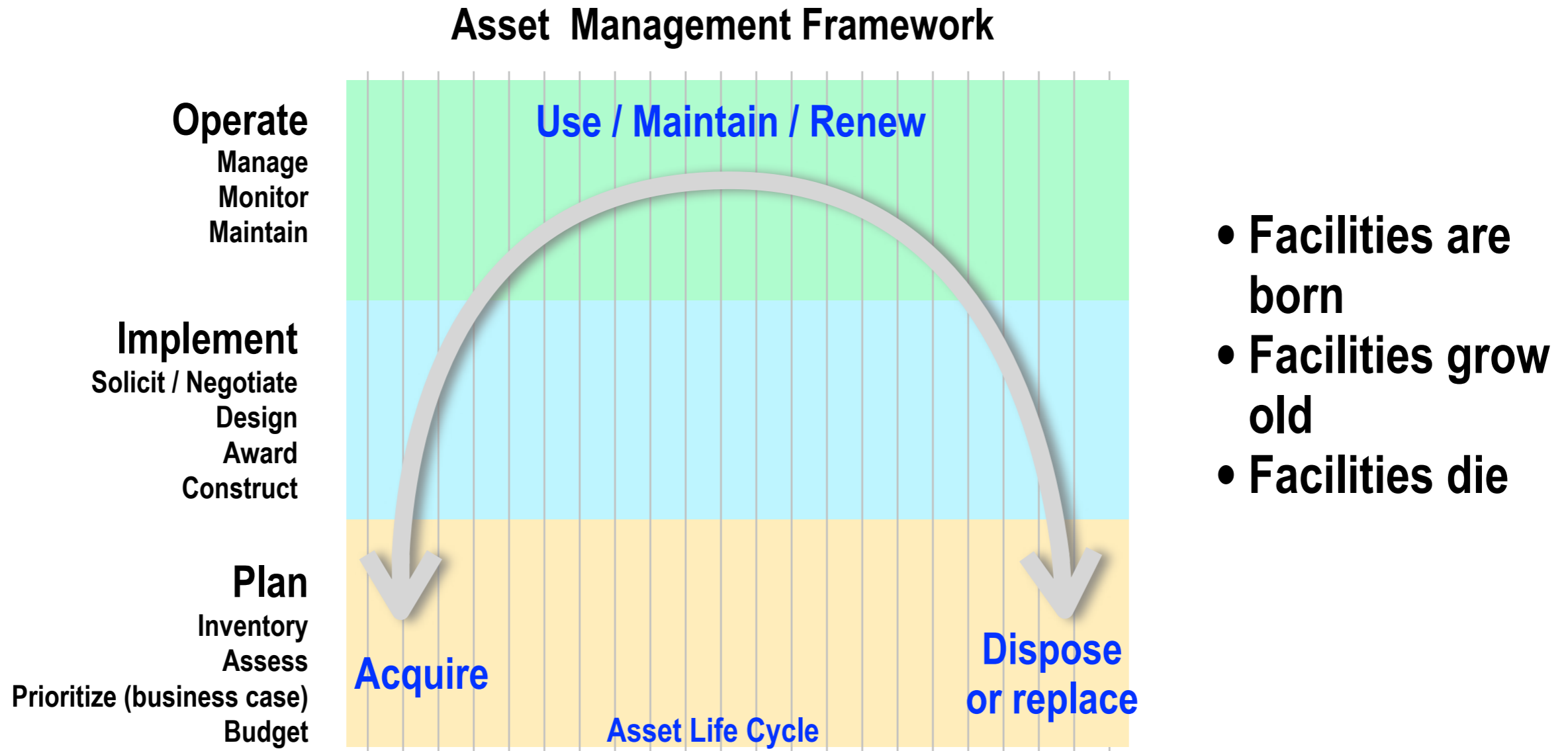
8 (3) work with the general services
9 department and other state agencies in developing
10 recommendations for addressing deferred maintenance on state
11 facilities and disposal strategies for aging facilities no
12 longer able to serve their mission; and

13 (4) utilizing life cycle costing, work with
14 the general services department in developing recommendations
15 regarding whether the state should lease, lease-purchase or
16 purchase needed additional facilities.

- ✓ **Asset Management Framework**
- ✓ **New Mexico**
 - ▶ *What is the Condition of the State-Funded Facilities?*
 - ▶ *What is the Magnitude of Capital Facilities Renewal Needed?*
- ✓ **Best Practices of Other States**
- ✓ **Recommendations / Next Steps**

Asset Management Framework

Asset Management Framework

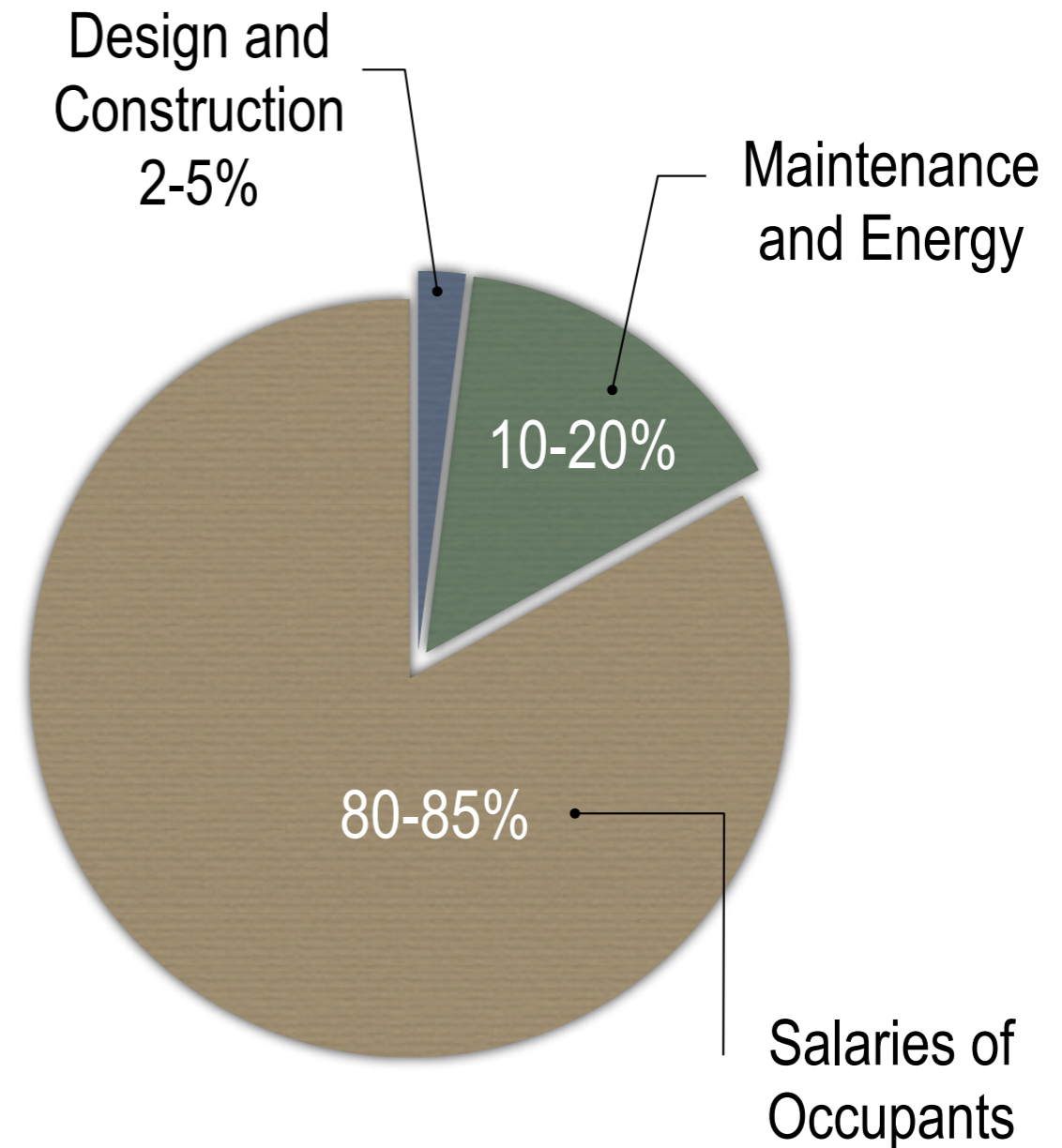


“...a methodology needed by those who are responsible for efficiently allocating generally insufficient funds amongst valid and competing needs.”

— *The American Public Works Association Asset Management Task Force*

Total Cost of Ownership

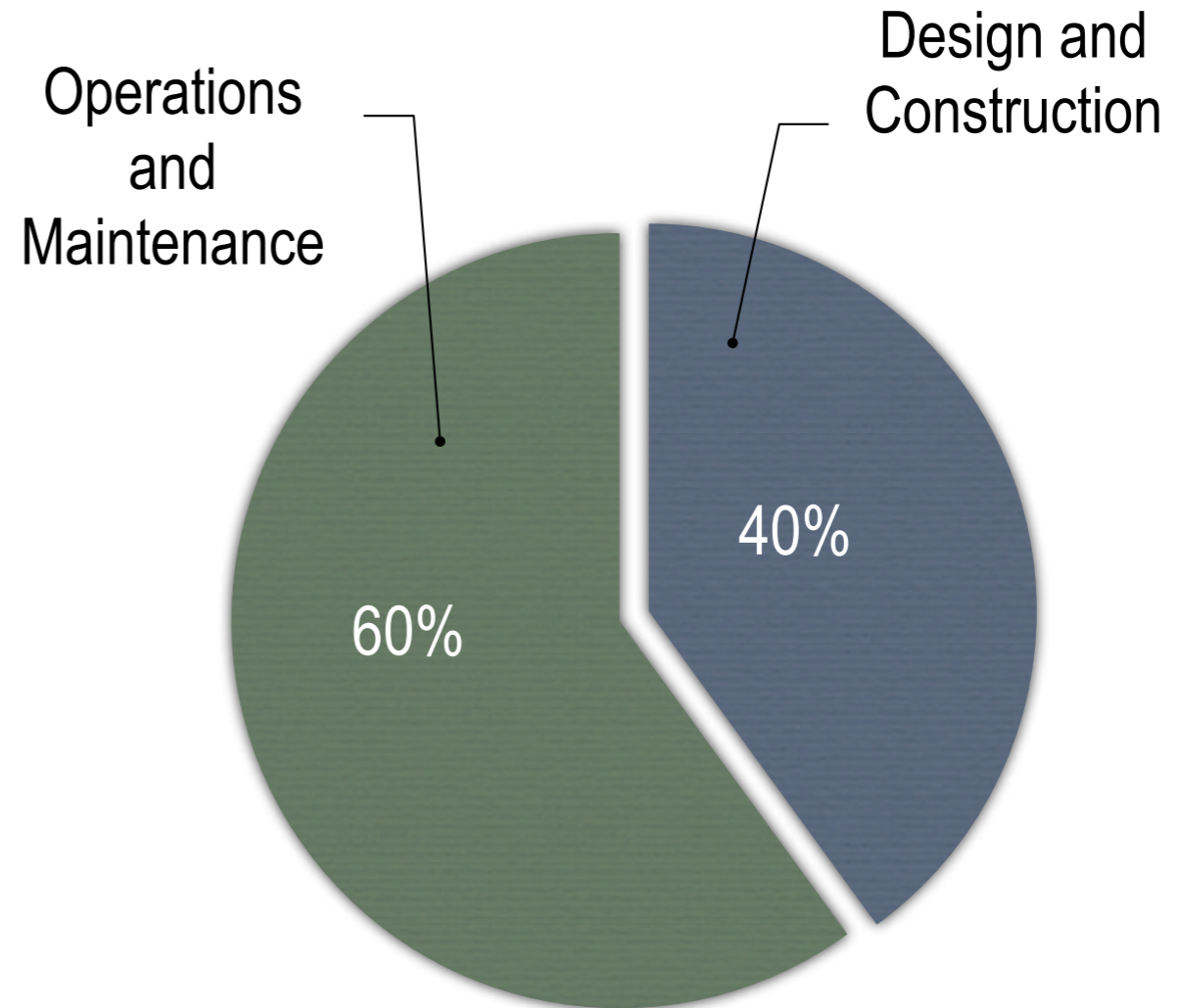
✓ **Over a 30 year period, personnel are the greatest cost of a building**



Sources: <http://www.wbdg.org/resources/lcca.php>, <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm08732839/page01.htm>

Total Cost of Ownership

✓ **Not including personnel, the cost of operation and maintenance is more than the initial construction cost***



*Variables: Building type, location, financing term, financing rate, inclusion of cyclical renewal, etc.

Source: <http://www.fs.fed.us/t-d/pubs/htmlpubs/htm08732839/page01.htm>

Total Cost of Ownership

- ✓ All building systems or components have a designed life expectancy or estimated number of years of service
- ✓ When the life expectancy is exceeded, but equipment remains in service, the number of repairs and the overall cost of maintaining the building increases



	1964	1970	1975	1980	1985	1990	1995	2000	TODAY	2010	2015	Life Expectancy (years)	Years in Service
Architecture													
Structural System	[Green bar from 1964 to 2015]											100	40
Brick Walls	[Green bar from 1964 to 2015]											100	40
Windows	[Green bar from 1964 to 2000, Red bar from 2000 to 2015]											30	40
Roofing	[Green bar from 1980 to 2000, Red bar from 2000 to 2015]											15	21
Flooring - Terrazzo	[Green bar from 1964 to 2015]											60	40
Flooring - Vinyl Tile	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											20	40
Flooring - Sealed Concrete	[Green bar from 1964 to 2015]											60	40
Flooring - Ceramic Tile	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											30	40
Walls - Concrete Block	[Green bar from 1964 to 2015]											60	40
Walls - Plaster	[Green bar from 1964 to 2015]											60	40
Walls - Ceramic Tile	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											30	40
Ceiling - Acoustic Tile	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											20	40
Elevator	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											25	40
Doors	[Green bar from 1964 to 2015]											50	40
Mechanical													
Absorption Chiller	[Green bar from 1975 to 2000, Red bar from 2000 to 2015]											25	30
Air Handling Units	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											25	40
Heating System	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											25	40
Plumbing	[Green bar from 1964 to 2015]											40	40
Plumbing Fixtures	[Green bar from 1964 to 2015]											40	40
Electrical													
Substation Transformers and Low Voltage Switchgear	[Green bar from 2000 to 2015]											40	7
Power Panels	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											20	40
Lighting and Receptacle Panelboards	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											20	40
Lighting and Receptacle Panelboards	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											20	40
Primary Switchgear	[Green bar from 1964 to 1980, Red bar from 1980 to 2015]											30	40

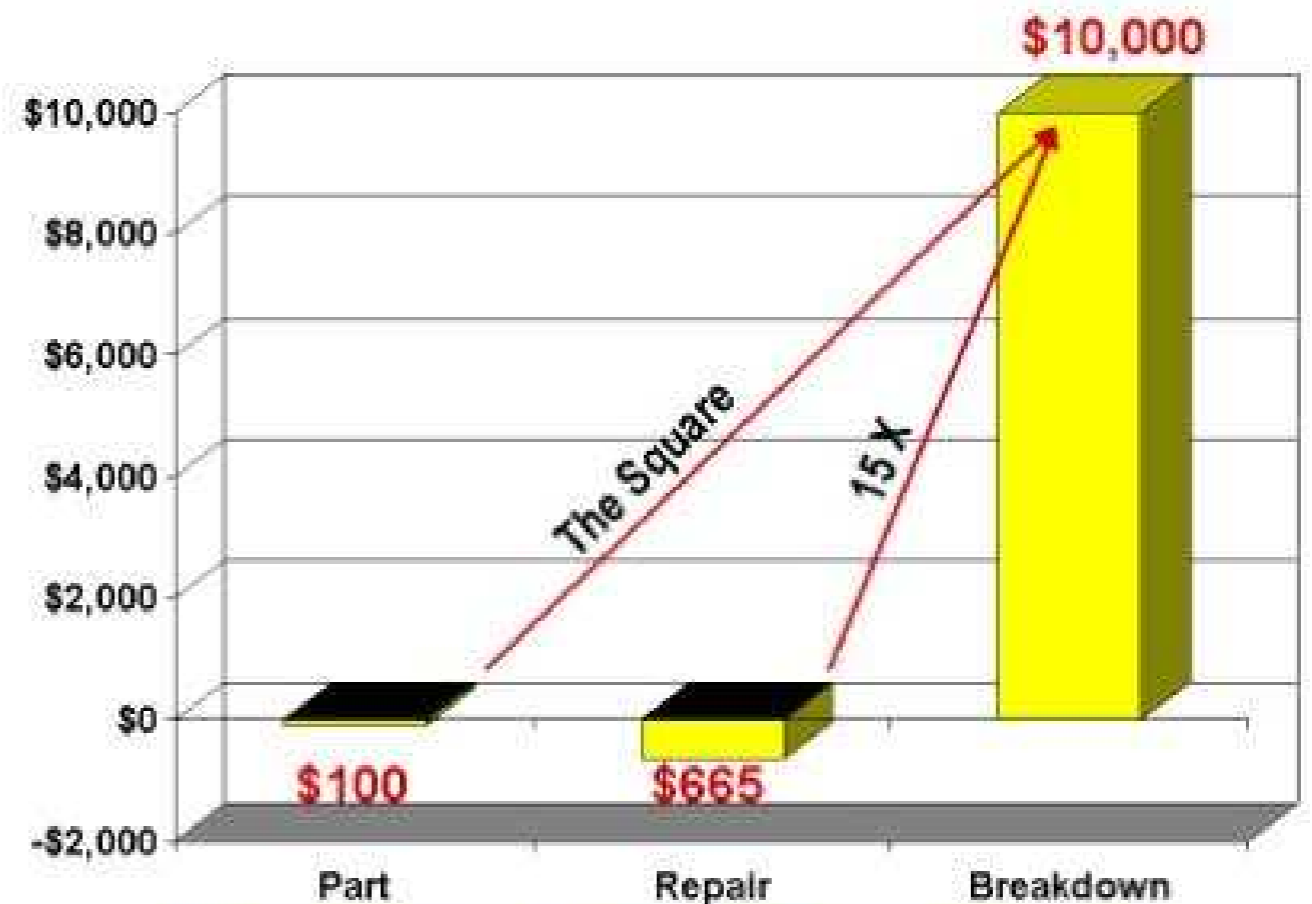
Total Cost of Ownership

- ✓ **Resources are needed periodically to renew building systems that reach the end their life cycle and adapt to new requirements = Capital Facilities Renewal**
- ✓ **When maintenance, system upgrades, or repairs are deferred to a future budget cycle or postponed until funding becomes available (deferred maintenance) – building systems are run to failure – costs are accelerated**
- ✓ **ARC's experience is that if building problems are known, the primary reason repairs are not made is due to a lack of resources**

Total Cost of Ownership

✓ One expert predicts that if you defer maintenance, you can expect future expenses to be equal to, or greater than, the cost of the part squared or 15 times the total repair cost

Geaslin's Inverse-Square Rule for Deferred Maintenance



Whenever you defer a repair, you may be incurring a cost of 15 times that amount.

[http://www.buildings.com/ArticleDetails/
tabid/3321/ArticleID/3161/Default.aspx](http://www.buildings.com/ArticleDetails/tabid/3321/ArticleID/3161/Default.aspx)

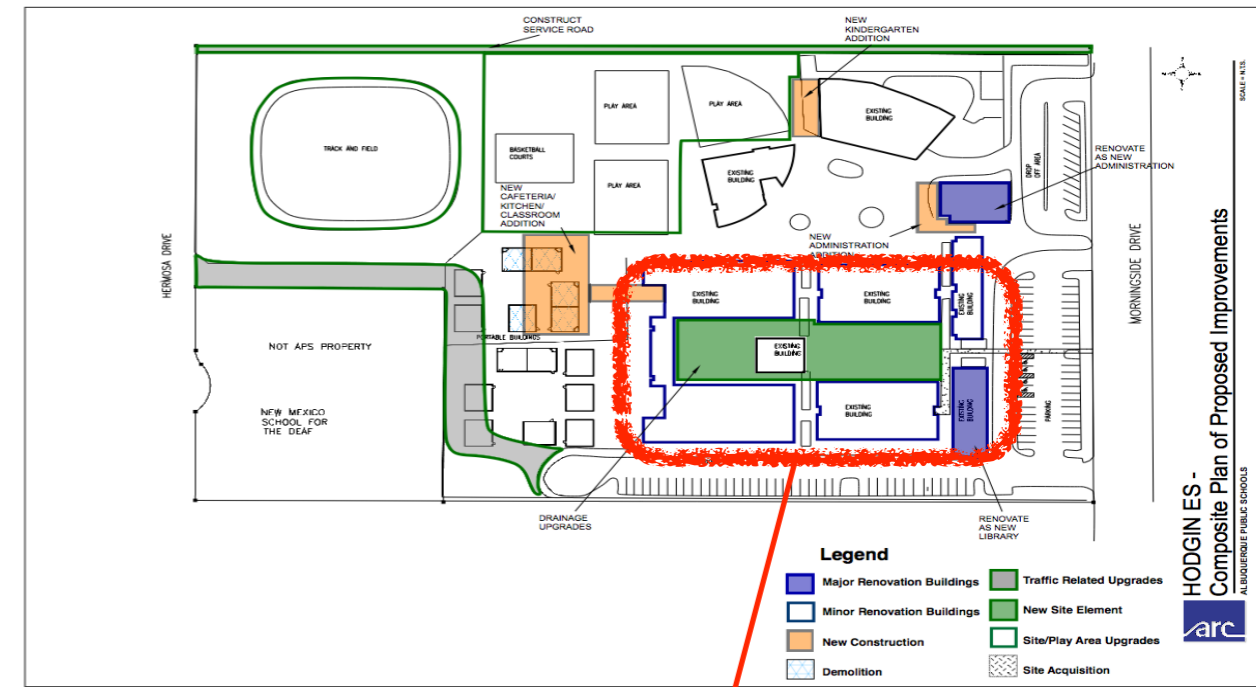
✓ Hodgin Elementary School (APS)

▶ *Central courtyard has known drainage issue*

- *Estimated cost to fix is \$145,000 and is currently funded in the APS Facilities Master Plan*

▶ *Resources were not available to address the problem immediately*

- *Heavy rain caused repeated flooding with cumulative cost of repair of floors and casework of over \$250,000 (and counting)*
- *Diverts staff from other important tasks*



Sandbags



✓ Definitions

▶ **Replacement Cost (Facility Replacement Cost)**

- *Estimated cost to completely replace an existing facility with a new structure of identical size and use on the same site as the existing facility*

▶ **Capital Facilities Renewal**

- *Restore/ renew/ repair damaged or worn-out assets / systems / components at the end of their useful life*
- *Address affects of accumulated deferred maintenance*
- *Adapt physical plant to evolving needs and changing standards*

▶ **Facilities Condition Index (FCI) [Facilities Condition Needs Index]**

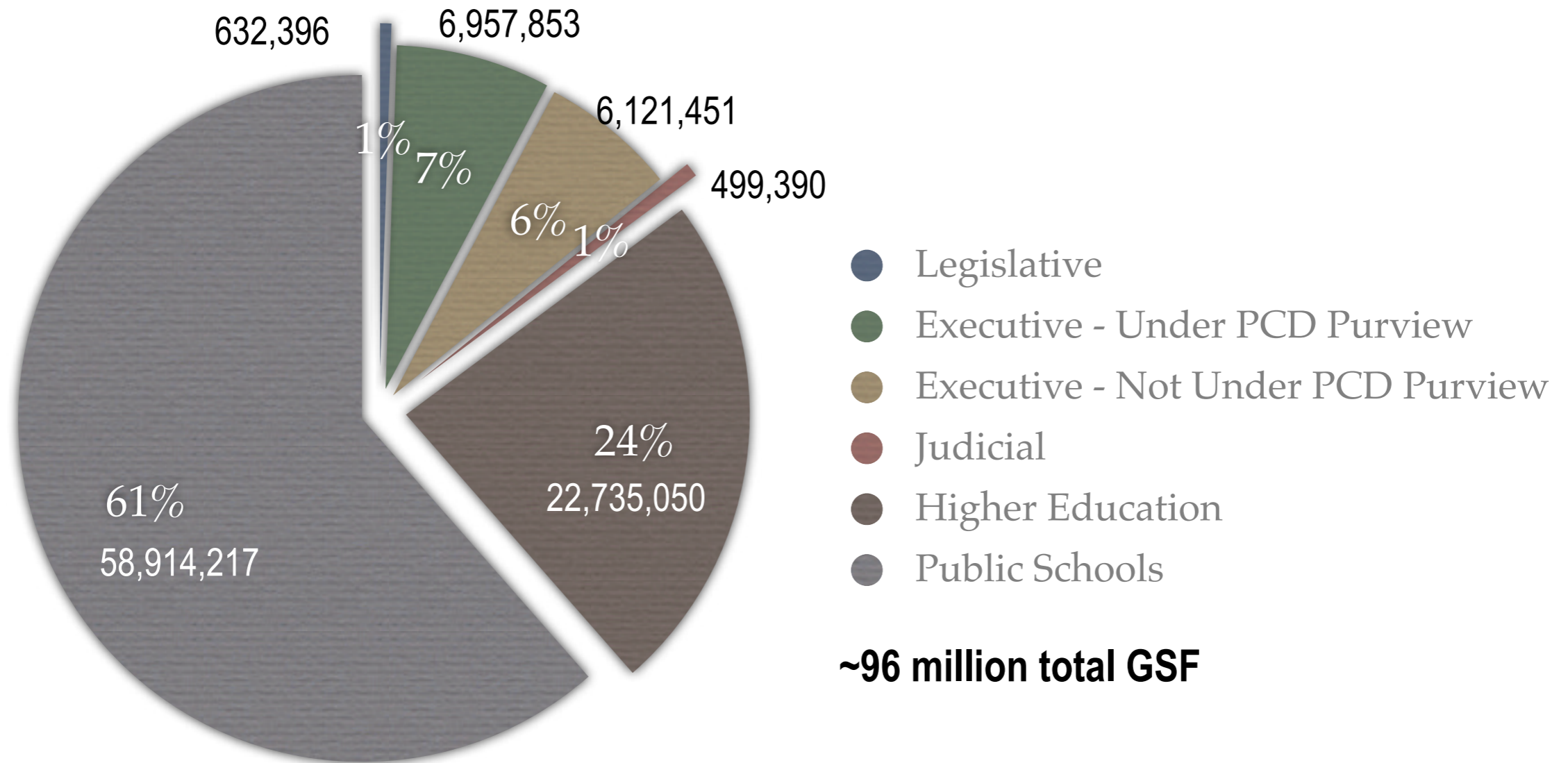
- *The ratio of total Capital Facilities Renewal Backlog (minus routine maintenance) to the total facility replacement cost*
- *The higher the index, the worse the overall condition*
- *Current industry standards consider a building with an FCI of 0 to 5% good; 6 to 10% fair and 10% and above poor*

New Mexico

- **What is the Condition of the State of New Mexico Facility Assets?**
- **What is the Magnitude of Capital Facilities Renewal Needed?**

State Facilities

Distribution of Gross Square Footage of State Funded Facilities (GSF) (including Higher Education and Public Schools)



State Facilities

- ✓ **Public Schools – have independent processes**
 - ▶ *Public Schools Capital Outlay Council (PSCOC) with management by the Public Schools Facilities Authority (PSFA)*
 - ▶ *Independent condition assessments*
 - ▶ *District Facilities Master Plans and Maintenance Plans*
- ✓ **Higher Education – has a mechanism to address on-going capital facilities renewal**
 - ▶ *Building Renewal and Replacement (BRR) Formula*
 - *Adopted in 1995*
 - *Full formula is 2.5% of replacement value of eligible facilities*
 - *Now funded at a portion of formula*

Distribution of State Funded Facilities

✓ Focus is on the remaining 13.8 million gsf of state funded facilities

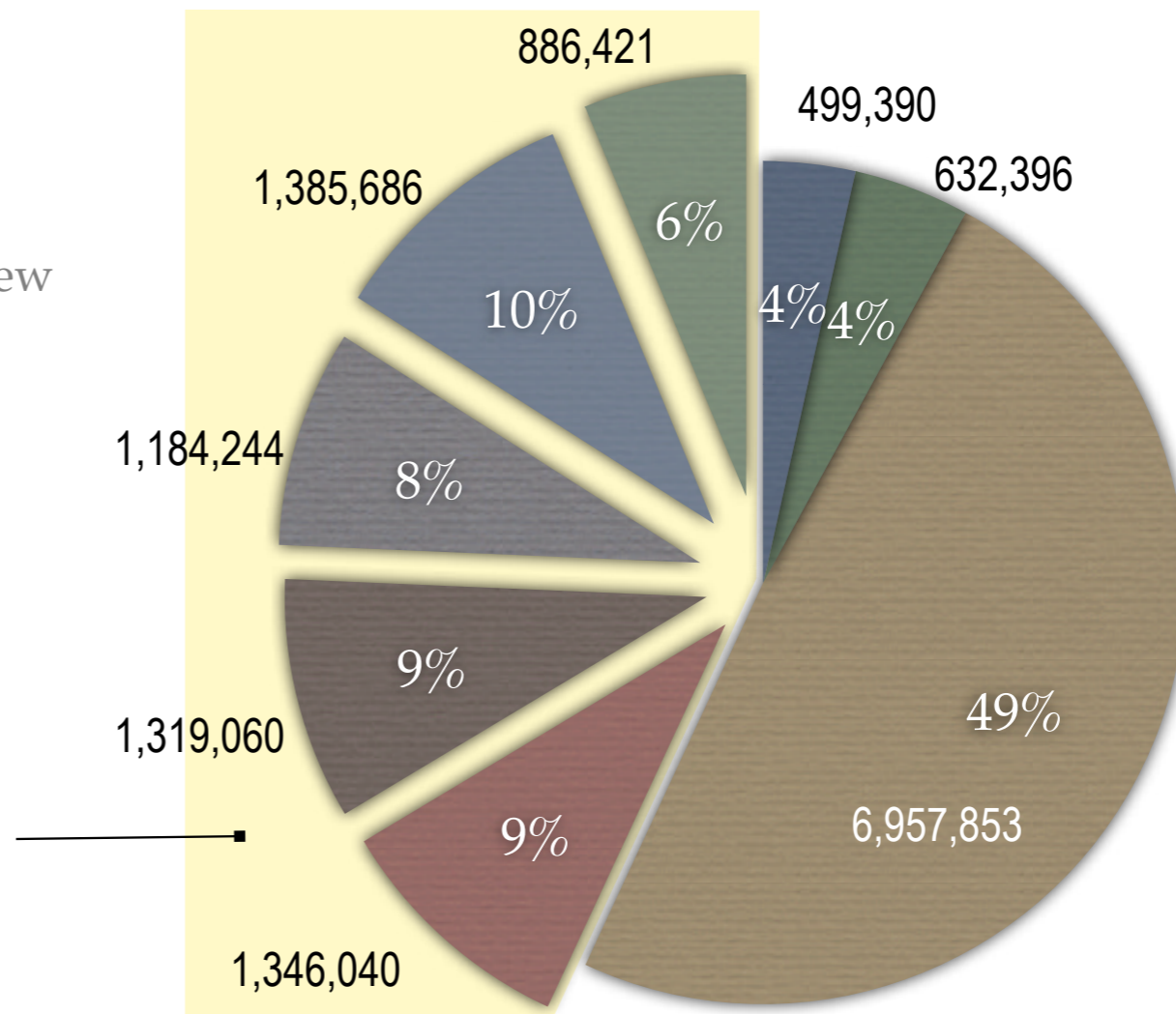
Distribution of Gross Square Footage of State Funded Facilities (GSF)

(not including Higher Education and Public Schools)

~13.8 million total GSF

- Legislative
- Judicial
- Executive - Under PCD Purview
- DCA
- DMA
- DOT
- ExpoNM
- Other

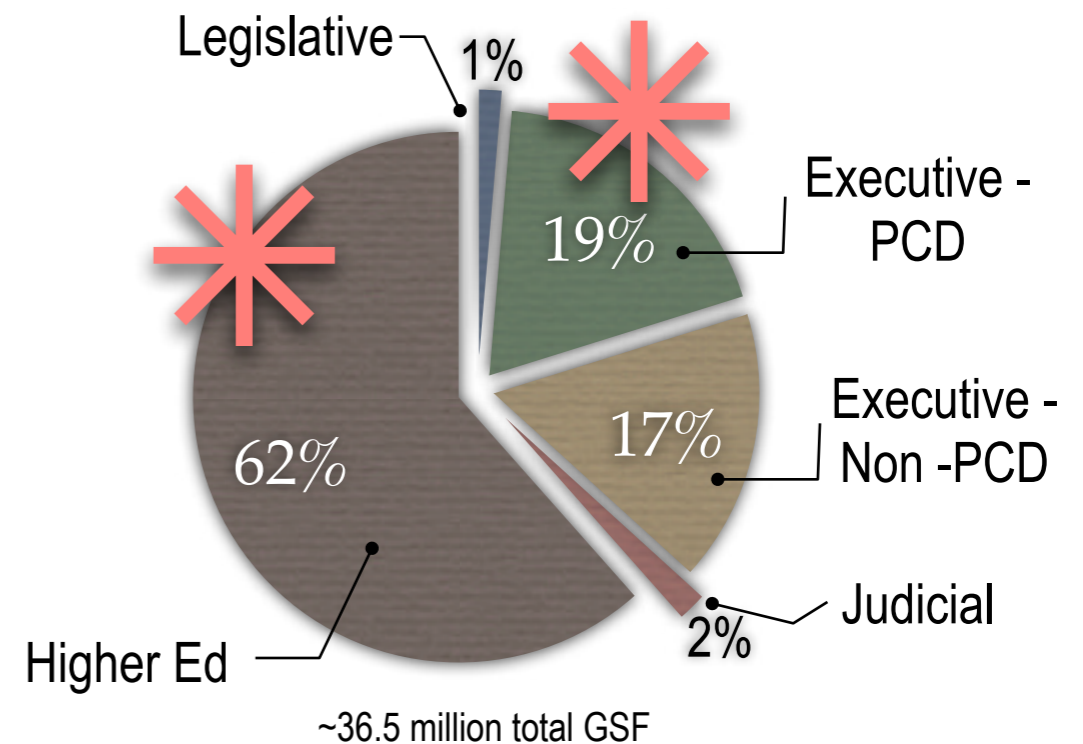
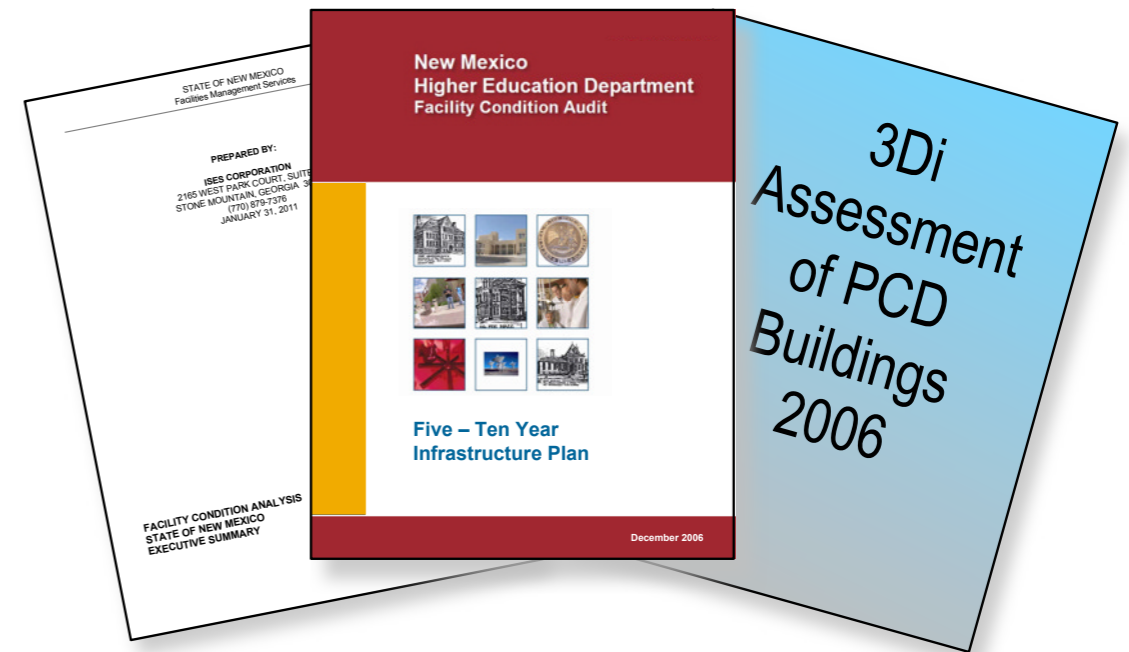
Executive -
Not under
PCD
Purview
~6.1 million GSF



✓ Three sources of condition data

- ▶ *3Di assessment of PCD Buildings, 2006*
- ▶ *ISES study of a portion of PCD facilities, 2011*
- ▶ *3Di assessment HED of all colleges and universities, 2006*

✓ Studies do not address all state facilities, were done at different times, and have similar, but not identical methods and terminology



* Have some condition data

State Facilities

- ✓ **Do not know current capital facilities renewal needs for all state-funded facilities**
- ✓ **Available condition assessments indicate that the needs are significant**
 - ▶ ***Facilities under PCD purview***
 - *FCI of 26-33%*
 - *Average age of 36 years*
 - Weighted average (age x gsf / % total gsf) = 58 years
 - ▶ ***Higher Education Facilities***
 - *FCI of 35%*

State Facilities

✓ Based on information available, estimated* needs in current dollars are:

- ▶ *~\$1.4 billion (without higher education)*
- ▶ *An additional ~\$2 billion for higher education*

✓ Likely 10-20% of needs are high priority**

- ▶ *\$144 - 288 million (without higher education)*
- ▶ *An additional \$209 -418 million for higher education*

Estimated State Capital Renewal Needs*

	Gross Square Feet (GSF)	\$ Millions	
		Replacement Cost	Capital Renewal Cost
Legislative	499,390	\$153.0	\$50.6
Executive - Under PCD Purview	6,957,853	\$2,131.7	\$705.1
Executive - Not Under PCD Purview	6,121,451	\$1,875.4	\$620.4
Judicial	632,396	\$193.8	\$64.1
Total without Higher Education	14,211,090	\$4,353.9	\$1,440.2
Higher Education*	22,735,050	\$5,945.8	\$2,089.0

*Has dedicated capital renewal funds

Interpolated FCI 34.3%

Blue - Have Data (all the rest interpolated)

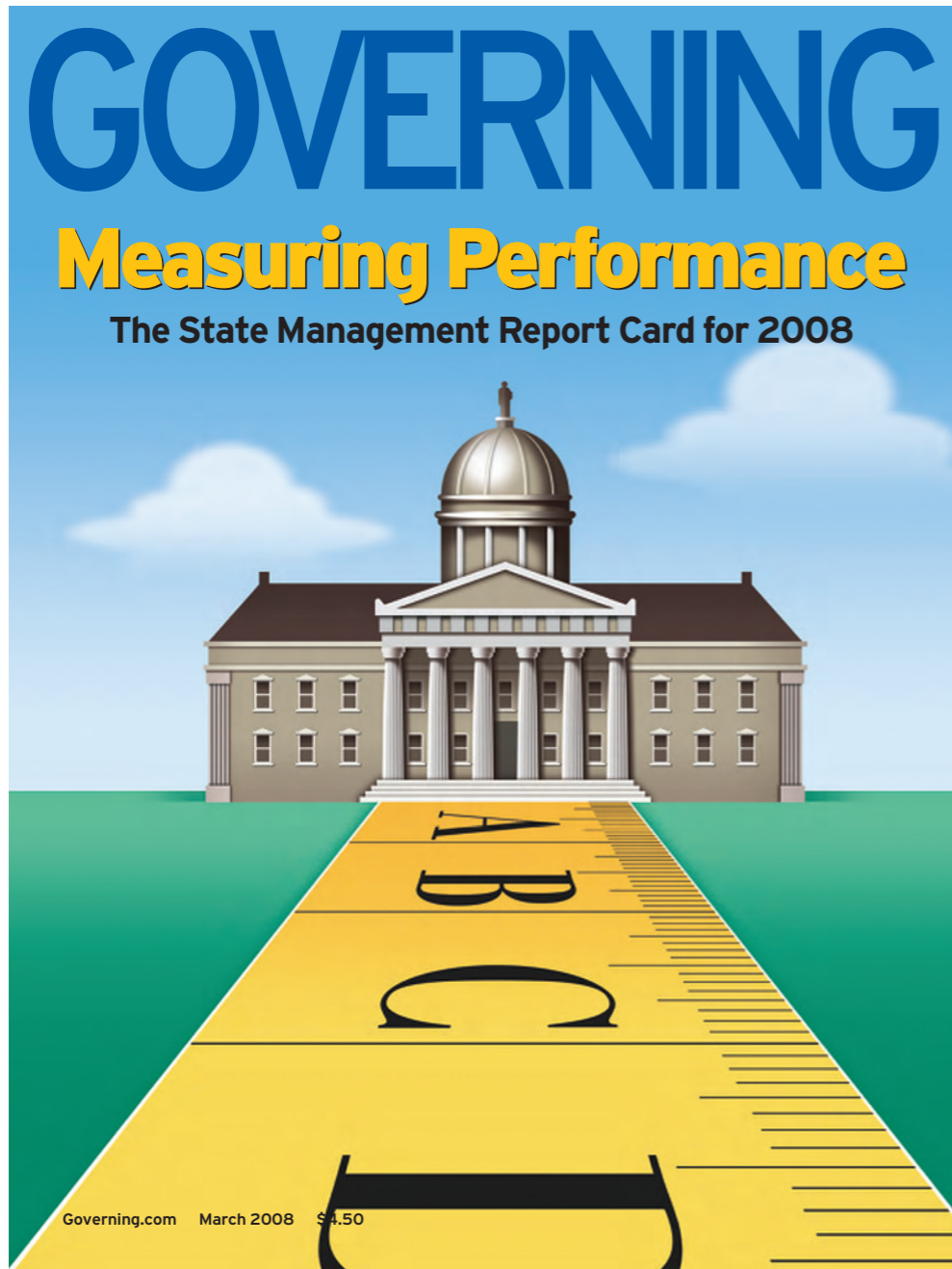
	without HED	Higher Ed
High Priority @ 10%	\$144.0	\$208.90
High Priority @ 20%	\$288.0	\$417.81

*Assumes:

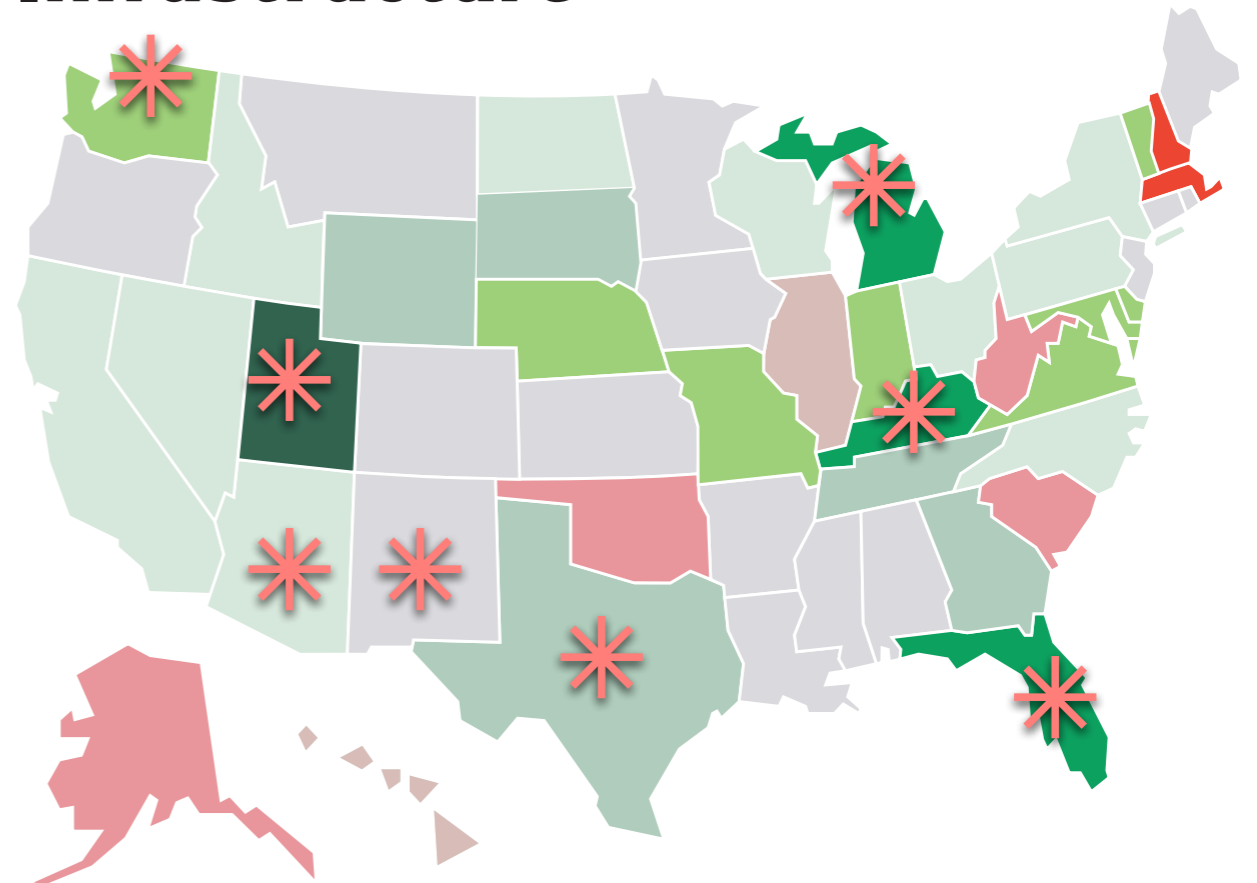
- Weighted averages of PCD studies
- Costs inflated to current dollars using consumer price index
- PCD weighted averages applied to non-PCD facilities without data

** Based on averages where information is available

Best Practices of Other States



Infrastructure



* Collected data these states

Yes
 Partial
 (Blank) No

Best Practices

Elements	New Mexico	Utah	Texas	Washington	Arizona
State Facilities Inventory	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
State Facilities Assessment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Statewide Plan		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Plan Addresses Owned		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Plan Addresses Leased		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Higher Ed is Included in Statewide Plan		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Public Schools are Included in Statewide Plan					
Centralized Management of State Facilities		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Decentralized Management of State Facilities (department, institutional control)	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
State Facilities Commission / or Board	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Technical / Specialized Management Staff	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Prioritization Process (Separate Needs vs. Wants)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	check
Dedicated Revenue Source for Renewal		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
“Grading the States” Score Infrastructure	C+	A	B	B+	B+
“Grading the States” Score Maintenance	Mid-level	Strength	Strength	Mid-level	Mid-level

Best Practices

- ✓ **Inventory assets**
- ✓ **Comprehensively assess condition of facilities**
- ✓ **Identify priorities in a way that separates needs from wants**
- ✓ **Centralize management of state facilities and sites**
 - ▶ *Facilities Board or Commission with technical, specialized staff*
 - ▶ *Acquisition, use, maintain, disposal*
 - ▶ *Recommends major acquisitions improvements to executive and legislature*
- ✓ **Prepare statewide plan that encompasses owned and leased facilities**
- ✓ **Provide a dedicated source of revenue for capital facilities renewal**

Utah State Building Board

- ▶ ***The State Building Board serves as a policy board to assess and prioritize the State's capital facility needs; to advocate high quality facilities that are safe and economical; and to oversee the planning, design, construction and maintenance of the State's capital facilities***
- ▶ ***The Utah State Building Board is comprised of eight members, seven of which are private citizens appointed by the governor. The eighth member is Director of the Governor's Office of Planning and Budget, and serves as the ex-officio representative of the Governor***
- ▶ ***Powers and duties***
 - *Recommend and update a Five-Year Building Plan that accurately reflects present and future state building needs*
 - *Allocate appropriations for capital improvements to specific projects*
 - *Approve the construction of certain higher education facilities that are funded entirely with non-state funds*
 - *Establish design criteria, standards, and procedures for new construction or remodel projects*
 - *Establish operations and maintenance standards for state facilities*
 - *Adopt rules consistent with the State Procurement Code to govern the procurement of architect/engineer services, construction, and leased space by Division of Facilities Construction and Management (DFCM)*
 - *Adopt other rules necessary for the effective performance of the Building Board and DFCM*
 - *Review and approve state agency and institutional master plans*
 - *Approve long-term facility leases*
 - *Recommend statutory changes to the Governor and Legislature that are necessary to ensure an effective, well-coordinated building program*

Texas Facilities Commission

- ✓ **The Texas Facilities Commission oversees the building maintenance and construction activities of state-owned office buildings and facilities, leasing procurement and office space lease management services for other state agencies**
- ✓ **The Texas Facilities Commission consists of seven board members. Three members are appointed by the governor, two additional members appointed by the governor from a list of nominees submitted by the Speaker of the House of Representatives, and two members appointed by the lieutenant governor**
- ✓ **An executive director manages the day-to-day business of the Commission, employs staff and fulfills duties and responsibilities assigned by law or delegated by TFC**

Texas Facilities Commission

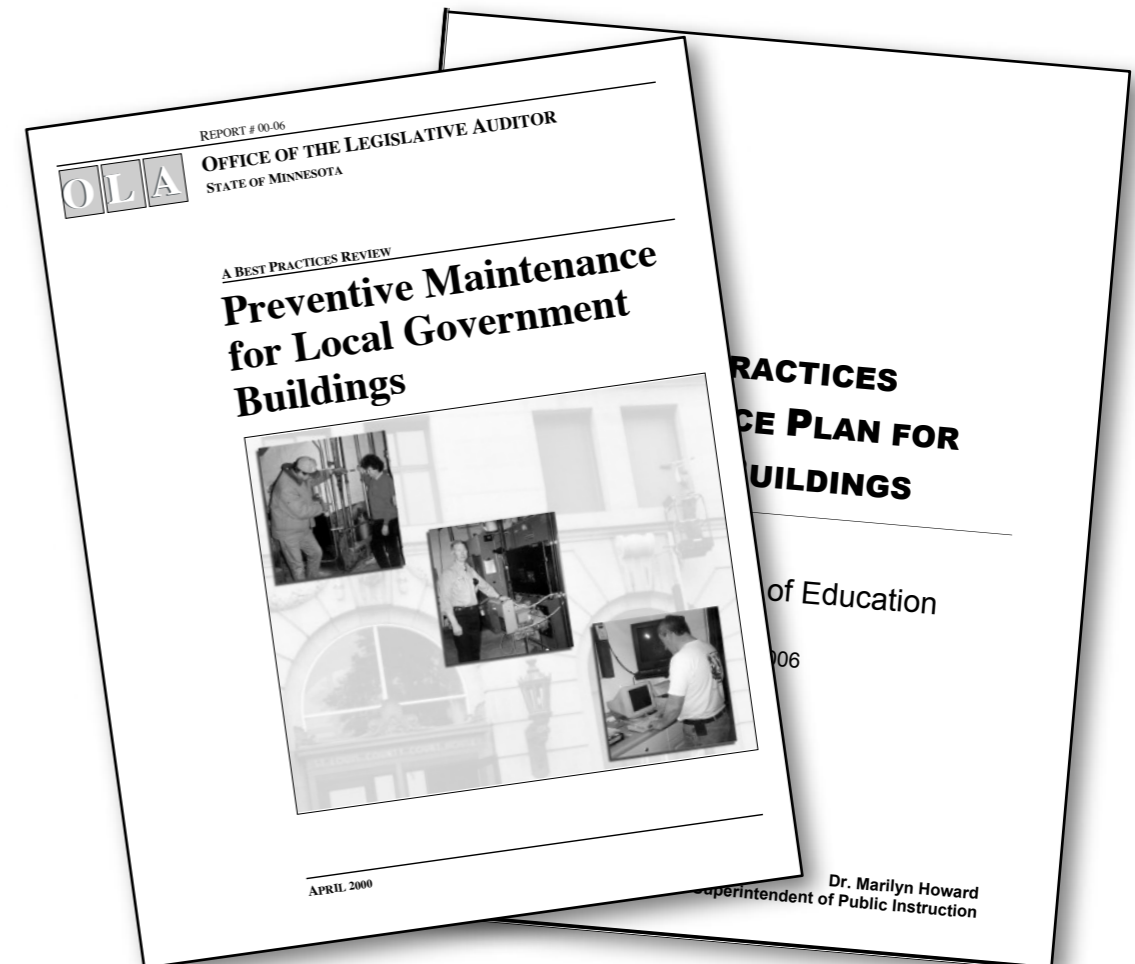
- ✓ **The Texas Facilities Commission oversees the building maintenance and In accordance with various statutory reporting requirements**
- ✓ **The Commission prepares a plan that provides information on:**
 - ▶ ***Improvements and repairs that have been made, with an itemized account of receipts and expenditures***
 - ▶ ***The property under the Commission's control, the condition of the property, and an estimate of needed improvements and repairs***
 - ▶ ***Efforts to co-locate administrative office space of state agencies***
 - ▶ ***State agency administrative office space ...including recommendations for the most cost- effective method to reduce amount and cost of office space...***
 - ▶ ***Building and construction cost information for state-owned buildings***

Texas Facilities Commission

- ✓ **Plan that provides information on (continued)**
 - ▶ ***The projected amount of space that state agencies will need***
 - ▶ ***The utilization, age, condition, and economic life of state-owned buildings on the Commission's inventory***
 - ▶ ***Analyses of projects that have been requested by state agencies***
 - ▶ ***Examination of the extent to which the State satisfies its need for space by leasing***
 - ▶ ***Examination of state-paid operation, maintenance, and telecommunications costs for existing buildings owned or leased by the State***
 - ▶ ***The economic and market conditions affecting building construction or lease costs throughout the State***
 - ▶ ***Analyses of whether the State will benefit more from satisfying its needs for space by buying, renting, building, or leasing facilities***
 - ▶ ***Recommendations for cost-effective strategies to meet state agencies needs in counties in which more than 50,000 square feet of usable office space is needed***
 - ▶ ***Specific analysis of the justification for each project***

Best Practices

- ✓ **There are many examples of best practices to address building repair backlogs [deferred maintenance]**
- ✓ **Common elements**
 - ▶ ***Recognize and understand the scale of the problem***
 - ▶ ***Quantify and communicate the financial impact***
 - ▶ ***Conduct preventive maintenance and complete repairs promptly to avoid backlog redevelopment***
 - ▶ ***Prioritize projects and develop a strategy to secure adequate funding***



Best Practices

- ✓ **How much should New Mexico budget for on-going building renewal?**
 - ▶ ***Society for College and University Planning (SCUP): 1.5-2.5% of replacement value***
 - ▶ ***Sherman-Dergis Building Renewal Formula (Arizona)***
 - *Equals (Replacement Value x .667) x (Age / 1275), generally equal to 1-2% of replacement value*
 - *Not funded at full value*
 - ▶ ***Utah: 1.1% of replacement value of state buildings by statute (current master plan indicates this should be 2-4%)***
 - ▶ ***NM BRR Formula for higher education only: 2.5% of replacement cost determined by HED for eligible facilities (not currently funded at full value)***

Best Practices

✓ Implications for New Mexico

- ▶ **~\$80 - 109 million / year in dedicated annual capital renewal funding (not including higher education or public schools)**

	Gross Square Feet (GSF)	\$ Millions	
		Replacement Cost	Capital Renewal Cost
Legislative	499,390	\$153.0	\$50.6
Executive - Under PCD Purview	6,957,853	\$2,131.7	\$705.1
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	without HED	Higher Ed
High Priority @ 10%	\$144.0	\$208.90
High Priority @ 20%	\$288.0	\$417.81

Sherman-Dergis Building Renewal Formula*	\$ Millions Of Replacement Value		
	1.1%	2.0%	2.5%
\$2.8	\$1.7	\$3.1	\$3.8
\$39.6	\$23.5	\$42.6	\$53.3
\$34.9	\$20.6	\$37.5	\$46.9
\$3.6	\$2.1	\$3.9	\$4.8
\$80.9	\$47.9	\$87.1	\$108.8
\$110.5	\$65.4	\$118.9	\$148.6

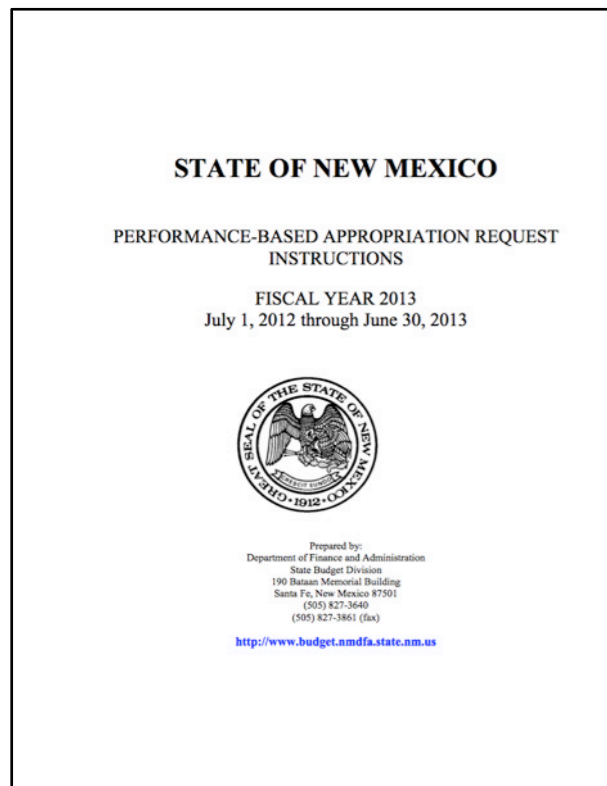
Sherman-Dergis Building Renewal Formula
= (Replacement Value x .667) x (Age / 1275)
assumes age of 35.6 based on 3Di study of PCD buildings

Note: BRR formula for higher education is 2.5% of replacement cost as identified by HED for eligible facilities (not fully funded)

✓ Good

- ▶ **Departments prepare strategic plans as part of performance-based budgeting**

PERFORMANCE-BASED BUDGETING



§6-3A-1 through §6-3A-8 NMSA 1978 of the Accountability in Government Act (AGA) set forth the framework and requirements for performance-based budgeting for New Mexico. A performance-based budget matches appropriations to the goals and objectives set out by agencies in their strategic plans. It also formally establishes quantitative targets for performance measures.

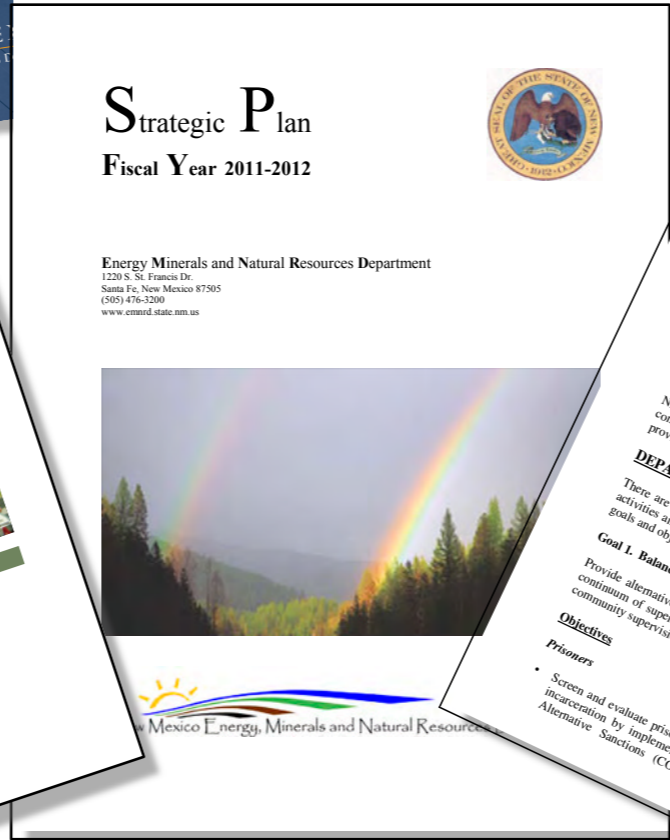
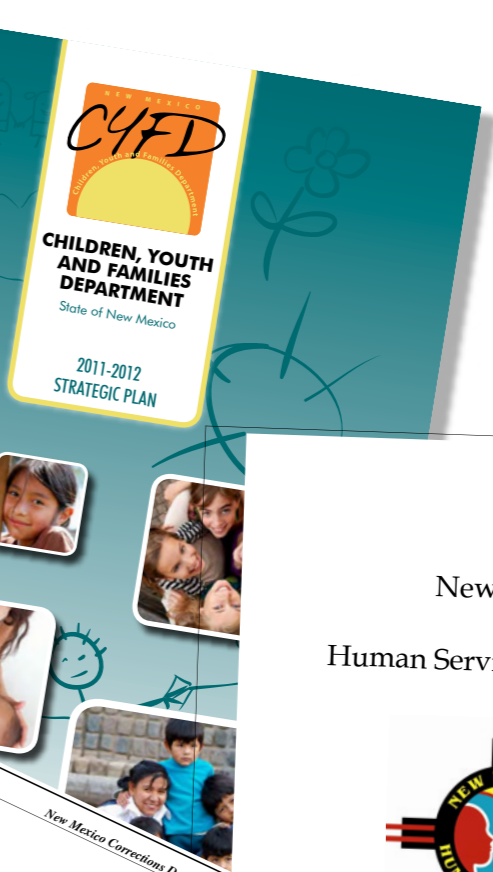
Among the principles that guide performance-based budgeting is the need to link appropriations with programmatic outcomes rather than simply budget categories or individual account codes. Strategic plans establish goals and objectives for the agency that serve as tools for making resource allocation decisions. Proposed funding levels are accompanied by specific, documented expectations in the form of performance measures.

Strategic Plan

The appropriation request must include a current copy of the agency's strategic plan. Strategic Plans should be updated annually. Required elements of a strategic plan are as follows:

- Agency vision statement
- Agency mission statement
- Program purpose statements for each budgeted program
- Goals for each budgeted program
- Objectives specific to each goal
- Strategies/tasks for accomplishing each objective
- FY13 performance measures in association with appropriate goals, objectives and/or strategies/tasks

NM Agencies Strategic Plans



✓ Good

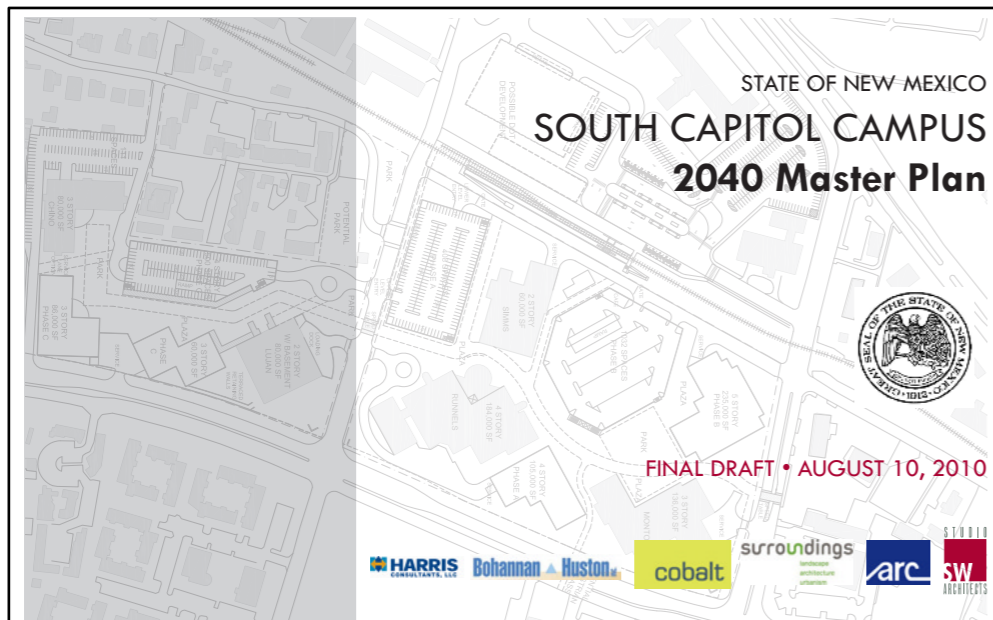
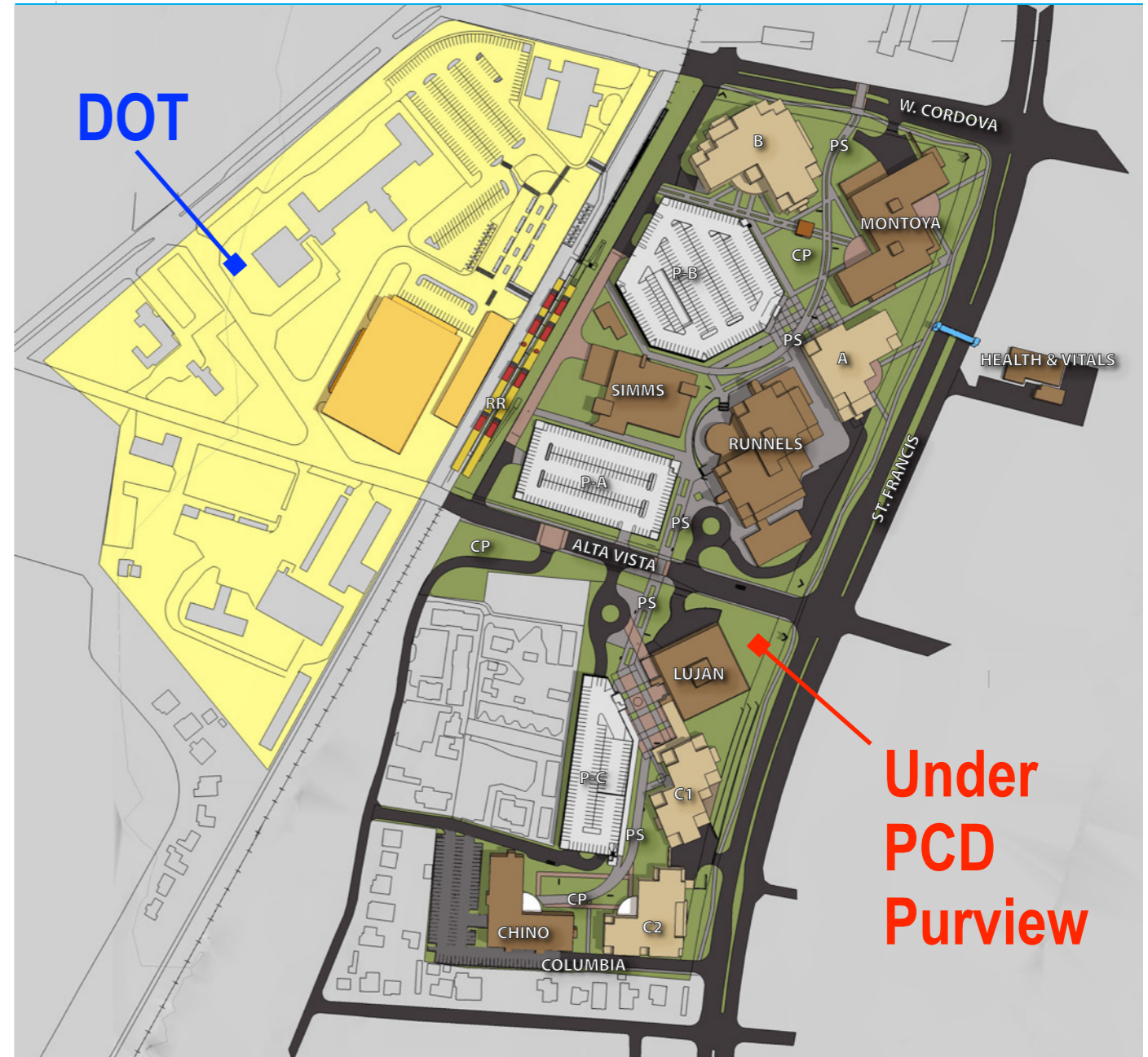
- ▶ **Higher Education dedicated capital facilities renewal revenues (BRR)**
- ▶ **Public Schools Capital and Maintenance Planning**
 - *Inventory of assets*
 - *Comprehensive condition assessment*
 - *Prioritization process that separates wants from needs*
 - *Centralized management of state assets*
 - Facilities Commission with professional staff
 - Addresses maintenance
 - *Implementation tied to dedicated source of revenue*
- ▶ **Existing technical and specialized staff at PCD, DOT, CAD**
- ▶ **Making progress on statewide inventory**
- ▶ **Capital project approval process through State Board of Finance**
- ▶ **Capitol Buildings Planning Commission**
 - *Provides a mechanism for wider strategic and cooperative planning*
 - *Adoption of planning policies and area plans*
 - *Space planning standards*
 - *Life Cycle Cost Analysis for lease - purchases*

✓ Areas for improvement

- ▶ ***Fragmented ownership, responsibilities, and procedures for managing facilities***
 - *Example: South Capitol Campus*
- ▶ ***No unified inventory (making some progress)***
- ▶ ***No consistent assessment of facilities (except for public schools)***
- ▶ ***No unified process for strategic capital planning and budgeting***
- ▶ ***No consistent processes for disposition of assets***
 - *Many statutes, rules affecting many agencies*
 - *Lack of cost-benefit analysis*
 - *Example: Fort Bayard*
- ▶ ***No linking of strategic planning and capital planning***
- ▶ ***No reliable source of funding***
- ▶ ***Large backlog of capital needs***

✓ South Capitol Master Plan, August 2010

▶ Split ownership

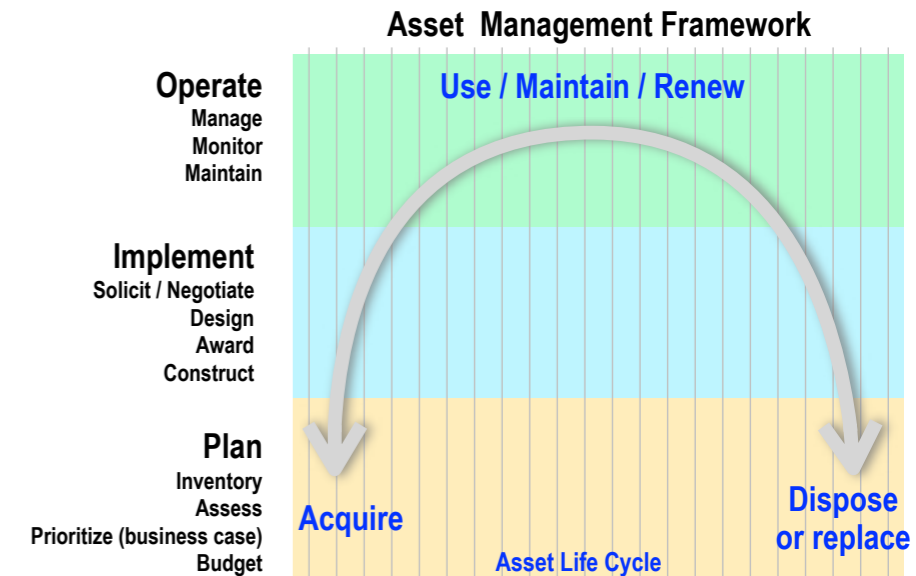


Recommendations / Next Steps

Recommendations

✓ Adopt a strategic asset management model

- ▶ **Complete inventory / database of state facilities and sites**
- ▶ **Conduct comprehensive and consistent assessment of state facilities**
- ▶ **Prepare departmental / agency master plans linked to strategic plans**
- ▶ **Centralize ownership and management of state facilities**
 - *Consider Facilities Commission or Board with technical, specialized staff with authority and budget to implement program (see Utah and Texas as models)*
 - *Responsibilities for acquisition, use, maintenance, disposal*
 - *Adopt prioritization criteria*
- ▶ **Prepare statewide plan that encompasses owned and leased facilities**
- ▶ **Identify a dedicated source of revenue for capital facilities renewal**

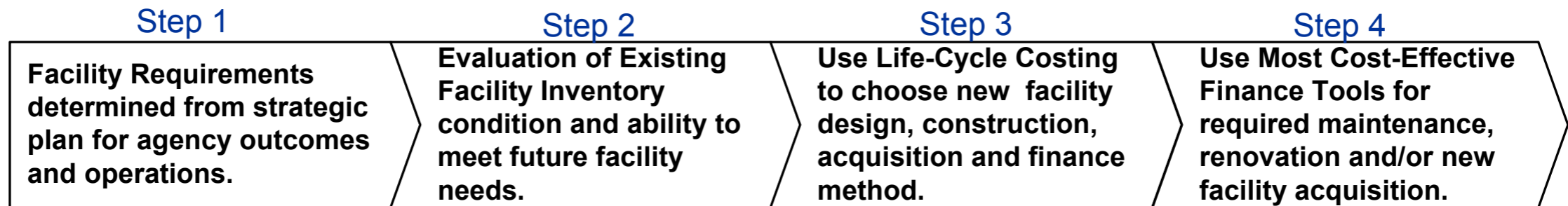


✓ Next Steps

- ▶ ***Identify and recommend a dedicated and reliable funding source for capital facilities renewal for state-funded facilities***
- ▶ ***Develop legislation to centralize management of state facilities***
 - *Potentially begin with a pilot program*
 - Focus on executive branch facilities
 - Consolidate executive branch technical and specialized staff
 - *Provide seed money to begin implementation*
 - Comprehensive inventory and condition assessment
 - Refine specific responsibilities and planning processes
 - Prepare prototype agency master plan

✓ 12.17.08 Presentation to the CBPC by Tom Pollard, PhD

Strategic Facility Planning Process



- Service Goals and Objectives
- Resource Requirements
 - Human
 - Financial
 - Information
 - Physical
- Consider alternative mixes of resources to meet goals
- Detail facility mix that comprises best option

- Determine availability of facilities owned or leased by agency or state
- For each facility find:
 - Age/Depreciation
 - Condition
 - Costs of Operation
 - Location
 - Life Cycle Cost/Benefit of Retention
 - Replacement Cost
- Utilize existing facilities first, when cost-effective
- Dispose of facilities no longer useful

- New Facility Acquisition or Construction
 - Project
 - Timing
 - Method of Acquisition
- Provision for new facility Maintenance
- Method of finance

- Private Facility Leasing
- Private or Public Lease-Purchase
- General Obligation or Revenue Bond Financing
- General Fund Appropriation

✓ Potential Agency Planning Framework





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