

# PROJECT PLANNING

ISSUES/WHY

**PROCESS** 

PLAYERS

FEASIBILITY

PROGRAMMING

FOLLOW-UP

TRENDS

NEW ORLEANS, LA JANUARY 2024



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# PROCESS PLAYERS FEASIBILITY PROGRAMMING FOLLOW-UP TRENDS

## THE IMPORTANCE OF PROJECT PLANNING

- Define **Scope** of Work
- Obtain Funding
- Set Expectations
- Prepare for Design
- Test Options





## WHEN DO YOU START THE PROJECT PLAN?

ISSUES/WHY

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- Master Planning/Process
- Priority in Capital Plan
- Gift Donations
- Emergency
  - Mother Nature
  - Regulatory
  - System/Building Failure
- Program Driven Request





PROCESS

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FEASIBILITY

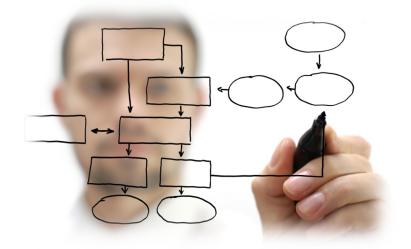
**PROGRAMMING** 

FOLLOW-UP

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## **PROCESS**

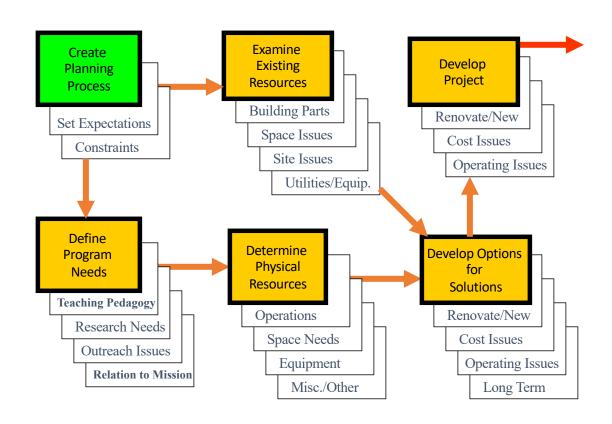
- Approach/Action Plan
- Set Expectations/Objectives
- Establish Planning Team
  - Lead Team
  - Supplemental Expertise
  - Clients
- Use of Consultants
  - Planners
  - Architects/Engineers
- Collect and Create Data





# PROCESS PLAYERS FEASIBILITY PROGRAMMING FOLLOW-UP TRENDS

## GENERAL APPROACH



**Project Planning** 



**PROCESS** 

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# Stakeholders

- Occupant
- Program
- Donor



## WHO SHOULD BE INVOLVED?

# Owners

- Administration
- State
- Other (Board/Community)

# Professionals

- Project Manager/Planner
- Architects/Engineers
- Specialty
- FM Staff
- Other Staff (IT, Security, etc.)



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## **ADMINISTRATION/OWNER**



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TRENDS







**PLANNER** 



# CONSULTANT OR IN HOUSE - ARCHITECT

ISSUES/WHY

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## UNIVERSITY PROJECT MANAGER

ISSUES/WHY

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"That's our new mission statement."



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## **Project Planning**

## I. Introduction

## Introduction

## TWO LEVELS OF PLANNING

## I. Program Information

Program Description
Strategic Objectives/Relation to College and
University Strategic Plan
Demographics
Other Program Information

Approach and Process Players/Stakeholders

**Operational Objectives** 

Qualitative Issues

**Sight Lines** 

Other Data

**Detailed Space Requirements** 

Room/Space Descriptions

Justification, Outcomes, Unique Considerations

## III. Program Needs

Existing Location
Space Issues
Existing
Required
Impact on Other Programs
Adjacency Considerations

Adjacency Considerations
Qualitative Issues
Other Issues

IV. Planned Improvements

Project Description Building Issues Major Equipment Issues Site Issues



Architectural Considerations
Landscape Considerations
Site Considerations
Structural Considerations
Mechanical Considerations
Electrical Considerations
Technology Considerations
Equipment Considerations
Utilities and Infrastructure Issues

## V. Implementation

Project Budget Funding Construction Approach Schedule



Design Approach
Source of Funds
Schedule of Expenditures/Financing Plan

## VI. University Significance

Relation to University Master Plan Effect on Other Facilities/Programs Abandoned, Transfer or Demolished Space

Alternatives Explored External Forces Justifying Approval Consequences of Not Being Approved



Space Opportunities/Backfill
Change in Operating Costs
Personal/Resources
Maintenance Considerations
Utility Considerations
Renewal and Replacement Considerations
Emergency Management Considerations



90% of project problems, are due to a lack of planning, not design.





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PLAYERS

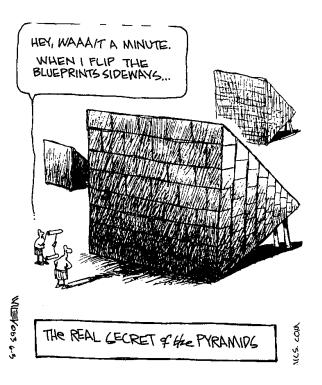
FEASIBILITY

PROGRAMMING

FOLLOW-UP

TRENDS

- Description of Program
- Operational Strategies
- History or Program
- Program Trends
- Relation to Role and Mission
- Relation to Outside Programs



**FEASIBILITY** 

## **FEASIBILITY**



ISSUES/WHY

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TRENDS

- People
- Business/Program
- Facility Conditions
- Research Components
- Business Relationships
- Regulatory Issues





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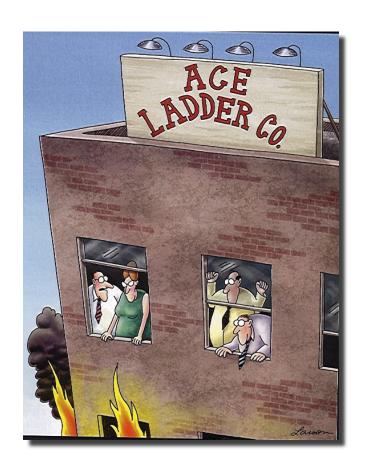
FEASIBILITY

PROGRAMMING

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TRENDS

- Space Requirements
- Unique or Special Features
- Health and Life Safety Issues
- Accreditation Issues



**FEASIBILITY** 

## **FEASIBILITY**



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- Master Plans
- Long Range Plans
- Other Projects
- Community Issues
- Private Sector
- State & Federal Issues





# PROCESS PLAYERS FEASIBILITY PROGRAMMING FOLLOW-UP TRENDS

## REFINE THE SPACE NEEDS

- Quantitative Issues
- Qualitative Issues
- Obsolescence Issues
- Adjacency Issues
- Information Issues





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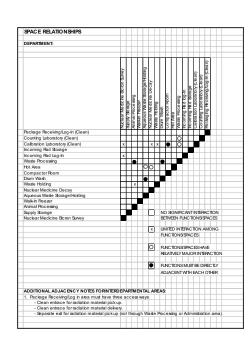
**PROGRAMMING** 

FOLLOW-UP

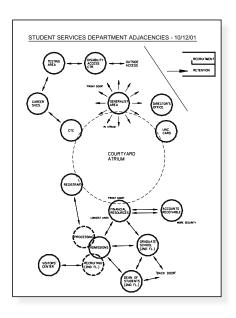
TRENDS

# • Bubble Diagrams

# • Space Matrix



# Parking Service Binding Design Offices Paper Storage Press Offices Warehouse Entry Additional Warehouse and Storage RR Parking Garage Conf Recept RR RR Open Of RR RR Open Of Recept RR Open to Bays (3/4) with Trash(7) Open to Below Second Level



SPACE ADJACENCIES



## SPACE DESCRIPTIONS

- Space Details
- Diagrams/Sketches
- Physical Issues
- Equipment

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Housef Operation	_		Justrial Hot Water (HW)			rcinogens/Regulated	+-
8 hours/day	-		Justrial Cold Water (ICW)			emical Waste Sorage	-
14 hoursiday			table Hot Water (HW)			logical Sprage	+-
24 hoursiday			table Cold Water (CW)			dioisotope Storage	-
			gh Purity Water (DE)			emical Storage	_
MECHANICAL	-	Ch	illed Water (CHWSIR)				-
Temperature			am/Condensate Return			RCHITECTURAL	+
72°F± 2°F	-	Ce	rbon Dioxide (C0 <sub>2</sub> )	-	Ro	or	-
68°-75° ± 2°F		Nb	rogen Gas (N <sub>2</sub> )			VCT (Chemical Resistant)	+
Other	-	Су	finder Gases			VCT	-
Humidity		1	hert	$\neg$		Welded Seam Sheet Viryl	-
50% ± 20%			Rammable			Epoxy	
Uncontrolled			Toxic			Carpet	_
15 Air Changes Hour			or Drain (FD)			Sealed Concrete	
10 Air Changes/Hour			or Sink (FS)		Pa	ritions	
5 Air Changes/Hour			fety Shower/Eyewash (SS)			Gyp Board, Epoxy Paint	
100% Make-up Air		Dx	anch Hose (DH)			Gyp Board, Paint	
Recirculated Air		T				Other	_
Air Pressure Positive			ECTRICAL		Ba		
Air Pressure Negative			0V, 20A, 1 Phase			4" Vinyl	_
Air Filtration/Supply			8V, 30A, 1 Phase			Integral willoor	
Air Ritration/Exhaust			8V, 30A, 3 Phase		Ce	iling	
	-		0V, 100A, 3 Phase			Open	
HOODS			lated Ground Outlet			Acoustic Tile	_
Chemical Fume Hood			nergency Power			Gyp Board, Epoxy Paint	
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Biological Safety Cabinet		De				3'-6" x 7'	_
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Canopy Hood	-		sk Lighting	-		1'-6"x7'	-
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		Ļ	75 fc at bench/desk		Na	tural Daylight	-
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OFFICIALS	
DRL(AIF)	
PACETYPE	
TRANSPORT ACTIVITY	
RBMARY LEER	
ROGRAM OCCUPANT	
TRIMATY ADJACENCES	
ECONDARY ADJACENCES	
ELONGINO AUPLENCES	
ERREYADACINCES	
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4 houniday 6 houniday	
8 houniday 12 houniday	
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## **BUILDING ISSUES**

- Architectural Issues
- Mechanical/Electrical Issues
- Technology Issues
- Equipment Requirements
  - Fixed
  - Movable
  - Operational Costs
  - Replacement Issues
- Other Issues





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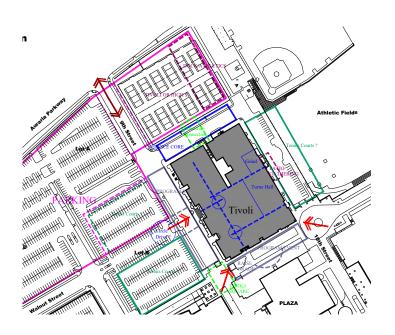
PROGRAMMING

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## SITE ISSUES

- Relationship to other Programs
- Access Issues
- Security Issues
- Parking
- Pedestrian
- Bicycles
- Utility Issues
- MP Issues





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## PROPOSED SOLUTIONS

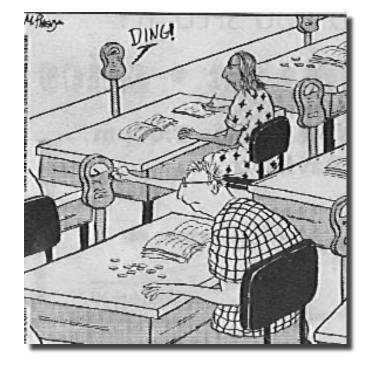
- Project Descriptions
- Schematic Design
- Budget Estimates
- Life Cycle Costs
  - Staffing
  - Utilities Costs
  - Maintenance Costs
  - Repair and Replacement Budget
- Project Alternatives





## ESTABLISHING THE BUDGET

- Average Cost of Facilities
- Breakout of Costs per Building Type
- Professional Fees
- Site Costs
- Equipment and Furniture
- Contingencies



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# **IMPLEMENTATION**



- Scheduling
- Funding
- Staging
- Construction Delivery Method
- M & O



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LIFE	CYCLE CO	OST ANAL	YSI	S					
	Project:	Allied He	alth	Building @	LC				
	Date:	7.16.13							
	Square Ft:	49,500							
Year	Utilities	Custodial	Mai	ntenance		ility / Risk nagement	CSP Staffing Needs	acilities Staffing Needs	49,500 Sq Ft. TOTAL
1	\$119,336	\$ 85,933	\$	11,195	\$	6,884	\$38,368.00	\$ 110,775	\$ 372,491
2	\$125,302	\$ 88,511	\$	11,755	\$	7,228	\$39,135.00	\$ 112,990	\$ 384,921
3	\$131,568	\$ 92,051	\$	12,343	\$	7,589	\$40,700.00	\$ 117,509	\$ 401,760
4	\$138,145	\$ 95,733	\$	12,960	\$	7,968	\$41,514.00	\$ 119,858	\$ 416,178
5	\$145,052	\$ 99,562	\$	13,608	\$	8,366	\$43,175.00	\$ 124,653	\$ 434,416
6	\$152,306	\$103,544	\$	14,288	\$	8,784	\$44,039.00	\$ 127,146	\$ 450,107
7	\$159,922	\$107,686	\$	15,002	\$	9,223	\$45,801.00	\$ 132,232	\$ 469,866
8	\$167,918	\$111,993	\$	15,752	\$	9,684	\$46,717.00	\$ 134,877	\$ 486,941
9	\$176,313	\$116,473	\$	16,540	\$	10,168	\$48,586.00	\$ 140,272	\$ 508,352
10	\$185,128	\$121,132	\$	17,367	\$	10,676	\$49,558.00	\$ 143,078	\$ 526,939
11	\$194,385	\$125,977	\$	18,235	\$	11,210	\$51,540.00	\$ 148,801	\$ 550,148
12	\$204,105	\$131,016	\$	19,147	\$	11,771	\$52,571.00	\$ 151,777	\$ 570,387
13	\$214,311	\$136,257	\$	20,104	\$	12,360	\$54,674.00	\$ 157,848	\$ 595,554
14	\$225,027	\$141,707	\$	21,109	\$	12,978	\$55,767.00	\$ 161,004	\$ 617,592
15	\$236,279	\$147,375	\$	22,164	\$	13,627	\$57,998.00	\$ 167,444	\$ 644,887

Repair and Replacemen	t Cost								
Project		Front Range	Community C	ollege, Allied H	ealth and Nursir	ng Building			
Date		25-Jun-13							
Inflation Factor		5%							
Construction Cost		\$17,671,500							
Study Period		30 Years							
					Current	Provisions for	Future Value Factor (FV)	Total Replacement	
Facility Sub Systems	likely Life	Range	Useful Life Chosen	% of Project Cost	Replacement Cost	Renewal w/o Inflation	5% useful Life	Cost w/ Inflation	(FV) Renewal
Foundation/Structure	N/A	N/A	N/A	5%	\$883,575				
Roofing	25	15 - 30	20	3%	\$530,145	\$26,507	2.635	\$1,396,932	\$69,84
Exterior Enclosure	30	30 - 50	40	8%	\$1,413,720	\$35,343	7.040	\$9,952,589	\$248,81
Interior Partitions	20	15 - 30	30	14%	\$2,474,010	\$82,467	4.322	\$10,692,671	\$356,42
Interior Finishes	10	5 - 15	15	11%	\$1,943,865	\$129,591	2.079	\$4,041,295	\$269,42
Elevators	40	25 - up	30	3%	\$530,145	\$17,672	4.322	\$2,291,287	\$76,37
Plumbing	30	20 - 60	40	12%	\$2,120,580	\$53,015	7.040	\$14,928,883	\$373,22
HVAC - moving	15	15 - 25	15	13%	\$2,297,295	\$153,153	2.079	\$4,776,076	\$318,40
HVAC - static	40	30 -60	40	10%	\$1,767,150	\$44,179	7.040	\$12,440,736	\$311,01
Electrical - moving	35	15 - 50	25	8%	\$1,413,720	\$56,549	3.386	\$4,786,856	\$191,47
Electrical - static	50	30 -60	40	7%	\$1,237,005	\$30,925	7.040	\$8,708,515	\$217,71
Fire Protection	50	30 -60	40	3%	\$530,145	\$13,254	7.040	\$3,732,221	\$93,30
Special Equip/Misc.	30	15 - 50	20	3%	\$530,145	\$26,507	2.635	\$1,396,932	\$69,84
Totals				100%	\$17,671,500	\$669,161		\$79,144,994	\$2,595,86

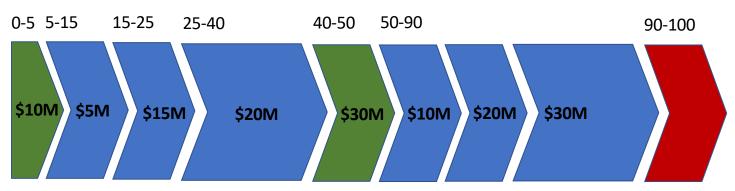
# **OWNERSHIP ISSUES**

Study Neriod   Study Method   Present value of One Dollar   Study Method   Stud		_							le Cost	Life Cyc
Study Neriod   Stud						Nursing	FRCC Allied Health &			Project:
Discount rate									rind	
Study Method   Present value of One Dollar   Study Method   Stud										
Building Value							25-Jun-13			Date
Additional Optg. & Maint. Costs  \$200,000 First Year Additional Energy/Utilities Inflation Factor  Pear or Investment  \$1						e Dollar	Present value of One		thod	Study Me
Principal & Interest   Major Repair & Replacement   Sh6   Sistematical Principal & Interest   Major Repair & Replacement   Sh6   Sistematical Principal & Interest   Major Repair & Replacement   Major Repair & Replacement   Sistematical Principal & Interest   Major Repair &							\$17,671,500		Value	Building
Principal & Interest   Major Repair &   Coperating &   Energy   Utilities   Salvage Value   Total   Amortized   Pre-						First Year	\$200,000	s	al Optg. & Maint. Cost	Addition
Principal & Interest   Major Repair &   Operating &   Energy   Utilities   Salvage Value   Total   Amortized   Pres   Total   Amortized   Pres   Salvage Value   Total   Amortized   Pres   Salvage Value						First Year	\$150,000		al Energy/Utilities	Addition
Vear         or Investment         Replacement         Maintenance         Utilities         Salvage Value         Total         Amortized         Pres           1         \$17,671,500         \$200,000         \$150,000         \$18,021,500         0.9434           2         \$210,000         \$157,500         \$367,500         0.8900           3         \$220,500         \$165,375         \$388,875         0.8906           4         \$221,525         \$173,644         \$405,189         0.7921           5         \$243,101         \$182,326         \$425,427         0.7473           6         \$255,256         \$191,442         \$446,669         0.7050           7         \$258,419         \$211,065         \$492,485         0.6274           9         \$295,491         \$221,618         \$517,109         0.9919           10         \$310,266         \$232,669         \$524,961         \$527,011         0.5284           11         \$330,266         \$332,669         \$524,951         \$57,011         0.528           12         \$343,266         \$232,699         \$526,551         \$588,619         0.4970           12         \$343,277         \$243,334         \$570,113         0.528							5%		Factor	Inflation
Vear         or Investment         Replacement         Maintenance         Utilities         Salvage Value         Total         Amortized         Pres           1         \$17,671,500         \$200,000         \$150,000         \$18,021,500         0.9434           2         \$220,000         \$155,750         \$367,500         0.8900           3         \$220,500         \$156,375         \$388,875         0.8396           4         \$231,525         \$17,644         \$405,189         0.7921           5         \$243,101         \$182,326         \$425,427         0.7473           6         \$255,526         \$191,442         \$446,669         0.7050           7         \$258,019         \$201,014         \$469,033         0.6651           8         \$281,400         \$211,065         \$492,485         0.6274           9         \$295,941         \$221,618         \$517,109         0.9919           10         \$310,266         \$232,669         \$5542,965         0.5284           11         \$352,779         \$244,334         \$570,113         0.5288           12         \$340,068         \$256,551         \$589,619         0.4970           13         \$3577,130         \$										
1         \$17,671,500         \$200,000         \$150,000         \$18,021,500         0.9434           2         \$210,000         \$15,7500         \$367,500         0.8900           3         \$220,000         \$165,375         \$388,875         0.8900           4         \$231,525         \$173,644         \$405,169         0.7921           5         \$243,101         \$182,326         \$425,427         0.7473           6         \$255,256         \$191,442         \$446,699         0.7050           7         \$368,019         \$201,014         \$460,033         0.6651           8         \$258,420         \$221,065         \$492,485         0.6274           9         \$235,491         \$221,661         \$517,109         0.5919           10         \$310,266         \$232,699         \$542,965         0.584           11         \$3325,779         \$244,334         \$570,113         0.5268           12         \$342,068         \$256,551         \$598,619         0.4970           13         \$357,713         \$282,847         \$620,550         0.4688           14         \$377,133         \$282,847         \$620,550         0.4688           15         \$4,241	sent Value			Total	Salvage Value					Year
2 \$210,000 \$157,500 \$367,500 0.8900 3 \$220,500 \$165,375 \$388,875 0.8396 4 \$231,575 \$173,644 \$405,169 0.7921 5 \$243,101 \$182,326 \$425,427 0.7473 6 \$253,576 \$191,442 \$446,699 0.7050 7 \$268,019 \$201,014 \$469,033 0.6661 8 \$255,576 \$191,442 \$446,699 0.7050 10 \$254,420 \$211,065 \$492,485 0.6274 9 \$254,491 \$221,1065 \$492,485 0.6274 9 \$255,491 \$221,618 \$517,109 0.5919 10 \$310,266 \$232,699 \$542,965 \$61,0584 11 \$332,779 \$244,334 \$570,113 0.5268 12 \$342,068 \$255,551 \$598,619 0.4970 13 \$36,068 \$255,551 \$598,619 0.4970 13 \$377,130 \$282,847 \$659,977 0.4423 14 \$377,130 \$282,847 \$659,977 0.4423 15 \$43,678 \$255,990 \$54,343,36 0.4173 16 \$415,768 \$256,990 \$4,343,136 0.4173 17 \$436,575 \$327,431 \$764,006 0.3714 18 \$458,404 \$343,803 \$727,625 0.3396 19 \$481,324 \$369,993 \$820,206 0.3503 19 \$481,324 \$369,993 \$820,206 0.3503 19 \$481,324 \$369,993 \$820,206 0.3503 19 \$481,324 \$369,993 \$820,206 0.3503 20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 21 \$550,690 \$397,995 \$928,664 0.2942 22 \$555,793 \$41,894 \$975,607 0.2775 23 \$588,602 \$438,799 \$1,023,841 0.6168 24 \$614,305 \$460,729 \$1,075,033 \$2470 25 \$54,413,720 \$645,000 \$483,765 \$2,542,505 \$2330 26 \$577,771 \$507,993 \$1,185,224 0.2198 27 \$771,135 \$533,351 \$1,124,485 0.2074 28 \$784,005 \$88,009 \$1,372,045 0.1846	\$17,001,48				Surrage value			ne procenient		
\$ \$220,500 \$165,375 \$385,875 \$0.8396 \$4 \$231,575 \$173,644 \$405,169 \$0.7921 \$5 \$231,301 \$182,336 \$425,427 \$0.7473 \$6 \$255,256 \$191,442 \$446,699 \$0.7050 \$7 \$258,019 \$201,014 \$460,033 \$0.6651 \$8 \$258,401 \$201,065 \$492,485 \$0.6274 \$9 \$229,691 \$221,618 \$517,109 \$0.5919 \$295,491 \$221,618 \$517,109 \$0.5919 \$10 \$3310,266 \$222,699 \$542,965 \$0.5584 \$11 \$3310,265 \$492,485 \$171,109 \$0.5919 \$10 \$3310,265 \$122,618 \$517,109 \$0.5919 \$11 \$3310,265 \$122,699 \$542,965 \$0.5584 \$12 \$12 \$342,068 \$256,551 \$598,619 \$0.4970 \$13 \$352,779 \$244,334 \$570,113 \$0.5268 \$144 \$13,780 \$395,711 \$269,378 \$528,550 \$0.4688 \$14 \$377,131 \$282,847 \$569,970 \$0.4688 \$14 \$377,131 \$282,847 \$569,970 \$0.4423 \$15 \$54,241,160 \$395,986 \$296,990 \$4,934,136 \$0.4173 \$116 \$445,575 \$327,431 \$764,006 \$0.3714 \$18 \$445,675 \$327,431 \$764,006 \$0.3714 \$18 \$483,240 \$343,803 \$802,206 \$0.3503 \$19 \$483,240 \$343,803 \$802,206 \$0.3503 \$19 \$248,247 \$569,970 \$348,240 \$343,803 \$802,206 \$0.3503 \$19 \$248,247 \$569,000 \$349,341 \$764,006 \$0.3714 \$18 \$348,240 \$343,803 \$802,206 \$0.3503 \$19 \$348,240 \$343,803 \$802,206 \$0.3503 \$19 \$348,240 \$343,803 \$802,206 \$0.3503 \$240,317 \$0.3005 \$200 \$1,060,290 \$505,590 \$379,043 \$1,944,723 \$0.3118 \$248,240 \$343,803 \$802,206 \$0.3503 \$240,317 \$0.3005 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$279,043 \$1,944,723 \$0.3118 \$250,600 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,590 \$250,040 \$250,040 \$250,040 \$250,040 \$25	\$327,07								\$27,072,500	
4 \$231,525 \$173,644 \$405,169 0.7921 \$5 \$243,101 \$182,326 \$425,427 0.7473 \$6 \$243,101 \$182,326 \$425,427 0.7473 \$6 \$258,201 \$191,442 \$446,699 0.7050 \$7 \$258,619 \$201,044 \$469,033 0.6651 \$8 \$231,400 \$211,065 \$492,485 0.6274 \$10 \$255,409 \$221,618 \$517,109 0.5919 \$10 \$310,266 \$222,699 \$542,965 0.5284 \$11 \$325,779 \$244,334 \$570,113 0.5268 \$12 \$342,668 \$222,699 \$542,965 0.5584 \$12 \$342,668 \$222,699 \$542,965 0.5844 \$11 \$325,779 \$244,334 \$570,113 0.5268 \$12 \$342,668 \$255,699 \$542,965 0.4969 \$13 \$13 \$359,917 \$269,378 \$5628,550 0.4668 \$13 \$359,917 \$269,378 \$5628,550 0.4668 \$14 \$377,130 \$282,847 \$569,977 0.4423 \$15 \$44,241,160 \$377,130 \$282,847 \$569,977 0.4423 \$15 \$44,241,160 \$3415,786 \$311,839 \$727,625 0.3996 \$17 \$436,575 \$327,431 \$764,006 0.3714 \$436,575 \$327,431 \$764,006 0.3714 \$436,575 \$327,431 \$764,006 0.3714 \$438,303 \$802,206 0.3503 \$19 \$481,324 \$360,993 \$842,317 0.3305 \$2481,324 \$360,993 \$842,317 0.3305 \$2481,324 \$360,993 \$842,317 0.3305 \$2481,324 \$360,993 \$842,317 0.3305 \$260,000 \$1,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 \$222 \$555,193 \$41,894 \$975,087 0.2775 \$23 \$585,025 \$418,899 \$1,023,841 0.6618 \$245,440 \$244 \$5614,305 \$460,729 \$1,075,083 0.2470 \$255 \$344,005 \$446,072 \$1,000,000 \$1,185,224 0.2198 \$255,450,505 \$255,450	\$323,98									
\$243,101 \$182,326 \$425,427 0.7473\$  6 \$255,256 \$191,442 \$446,6699 0.7050 7 \$268,019 \$201,014 \$469,033 6651 8 \$258,140 \$211,065 \$492,485 0.6574 9 \$295,491 \$221,618 \$517,109 0.9919 10 \$310,266 \$232,699 \$5542,965 0.5584 11 \$325,779 \$244,334 \$570,113 0.5268 12 \$342,068 \$255,551 \$598,619 0.4970 13 \$352,779 \$244,334 \$570,113 0.5268 14 \$337,7130 \$282,847 \$559,90 0.4970 15 \$342,068 \$256,551 \$598,619 0.4970 15 \$435,778 \$282,847 \$559,97 0.423 15 \$4,241,160 \$395,986 \$296,990 \$4,394,136 0.4173 16 \$415,786 \$311,839 \$777,625 0.3936 17 \$446,575 \$327,431 \$764,006 0.3714 18 \$458,404 \$345,803 \$90,206 0.3503 19 \$483,404 \$348,803 \$802,206 0.3503 19 \$483,404 \$348,803 \$802,206 0.3503 20 \$1,060,290 \$505,390 \$379,905 \$928,654 0.2942 21 \$550,600 \$397,995 \$928,654 0.2942 22 \$557,199 \$417,804 \$975,007 0.2775 23 \$585,055 \$438,799 \$1,033,81 0.2618 24 \$514,305 \$460,729 \$1,033,81 0.2470 25 \$1,413,720 \$645,000 \$483,765 \$2,542,505 0.2330 26 \$577,771 \$507,933 \$1,185,224 0.2198 27 \$711,135 \$533,351 \$1,124,485 0.2074 28 \$774,605 \$588,009 \$1,372,045 0.1846	\$320,93	0.7921								4
7 \$268,019 \$201,014 \$469,033 0.6651 8 \$2581,400 \$211,065 \$492,485 0.6274 9 \$258,401 \$221,618 \$517,109 \$9199 10 \$310,266 \$232,699 \$542,965 0.5584 11 \$330,266 \$232,699 \$542,965 0.5584 11 \$332,579 \$244,334 \$570,113 0.5268 12 \$342,068 \$256,551 \$598,619 0.4970 13 \$359,171 \$269,378 \$628,550 0.4688 14 \$377,130 \$282,847 \$659,977 0.4423 15 \$4,241,160 \$395,866 \$296,990 \$4,394,136 0.4173 15 \$4,241,160 \$395,866 \$296,990 \$4,394,136 0.4173 16 \$415,786 \$311,839 \$777,625 0.3936 17 \$436,575 \$327,431 \$764,006 0.3734 18 \$484,840 \$343,803 \$802,206 0.3503 19 \$481,324 \$360,993 \$842,317 0.3305 20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 21 \$550,660 \$397,995 \$928,664 0.2942 22 \$557,393 \$41,284 \$975,087 0.2775 23 \$585,052 \$438,789 \$1,023,841 0.2618 24 \$543,055 \$460,729 \$1,075,033 0.2470 25 \$51,413,720 \$645,000 \$483,765 \$2,542,505 0.2330 26 \$577,771 \$507,953 \$1,185,224 0.2198 27 \$774,005 \$588,009 \$51,370,010 0.1956	\$317,92	0.7473								5
8 \$ \$281,420 \$221,065 \$492,485 \$0.6274 \$9 \$221,065 \$492,485 \$0.6274 \$9 \$229,691 \$221,618 \$517,109 \$0.9919 \$10 \$310,265 \$232,699 \$542,965 \$0.5584 \$11 \$5325,779 \$244,334 \$570,113 \$0.5268 \$12 \$5342,068 \$2555,551 \$598,619 \$0.4970 \$13 \$342,068 \$2555,551 \$598,619 \$0.4970 \$13 \$362,068 \$2555,551 \$598,619 \$0.4970 \$13 \$377,130 \$282,847 \$659,977 \$0.4423 \$17 \$269,378 \$628,550 \$0.4688 \$14 \$377,130 \$282,847 \$659,977 \$0.4423 \$15 \$64,241,160 \$395,866 \$231,839 \$727,625 \$0.3936 \$17 \$436,575 \$327,431 \$764,006 \$0.3714 \$18 \$458,404 \$343,803 \$727,625 \$0.3936 \$17 \$436,575 \$327,431 \$764,006 \$0.3714 \$18 \$458,404 \$343,803 \$802,206 \$0.3703 \$19 \$481,242 \$360,993 \$842,317 \$0.3305 \$20 \$20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 \$0.3118 \$19 \$4481,244 \$360,993 \$842,317 \$0.3305 \$22 \$481,244 \$360,993 \$379,043 \$1,944,723 \$0.3118 \$22 \$558,600 \$397,995 \$928,654 \$0.2795 \$22 \$558,505 \$438,789 \$1,023,841 \$0.6618 \$25 \$51,413,720 \$645,000 \$483,765 \$2,542,505 \$0.2330 \$25 \$1,413,720 \$645,000 \$483,765 \$2,542,505 \$0.2330 \$26 \$677,771 \$507,993 \$1,185,224 \$2198 \$27 \$711,135 \$533,351 \$1,124,485 \$0.2074 \$29 \$746,005 \$888,09 \$1,377,015 \$1,185,224 \$0.1866 \$14,005 \$1,006,710 \$1.956 \$1,006,710 \$1,1966 \$10 \$1,006,710 \$1,1966 \$10 \$1,006,710 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$1,1966 \$	\$314,92	0.7050	0.70	\$446,699		\$191,442	\$255,256			6
9 \$295,491 \$221,618 \$517,109 0.5919 10 \$310,266 \$232,699 \$542,965 0.5584 11 \$3325,779 \$244,334 \$570,113 12 \$342,086 \$255,551 \$598,619 0.4970 13 \$534,086 \$255,551 \$598,619 0.4970 13 \$539,171 \$269,378 \$528,550 0.4688 14 \$377,130 \$282,847 \$569,378 \$628,550 0.4688 15 \$4,241,160 \$395,986 \$296,990 \$4,334,136 0.4173 15 \$4,241,160 \$395,986 \$296,990 \$4,334,136 0.4173 16 \$415,786 \$311,899 \$777,625 0.3996 17 \$436,575 \$327,431 \$764,006 0.3714 18 \$458,404 \$343,803 \$802,206 0.3503 19 \$481,324 \$360,993 \$842,317 0.3305 20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 21 \$530,660 \$397,995 \$928,654 0.2942 22 \$557,193 \$411,894 \$975,087 0.2775 23 \$585,052 \$483,898 \$1,023,841 \$23 \$686,029 24 \$555,09 \$479,095 \$989 \$1,023,841 \$26188 24 \$564,020 \$483,789 \$1,023,841 \$26188 25 \$51,413,720 \$645,020 \$483,765 \$\$2,542,505 0.2330 26 \$577,271 \$507,933 \$51,185,224 0.2198 27 \$711,135 \$533,351 \$1,224,485 0.2074 28 \$774,6991 \$560,018 \$1,372,045 0.1866	\$311,95	0.6651	0.66	\$469,033		\$201,014	\$268,019			7
10 \$310,266 \$232,699 \$542,965 0.5584  11 \$325,779 \$244,334 \$570,113 0.5268  12 \$334,086 \$256,551 \$598,619 0.4970  13 \$342,086 \$256,551 \$598,619 0.4970  13 \$539,171 \$269,378 \$5628,550 0.46688  14 \$5377,130 \$282,847 \$569,977 0.4423  15 \$4,241,160 \$395,986 \$296,990 \$4,341,336 0.4173  16 \$415,786 \$311,839 \$727,625 0.3996  17 \$436,575 \$327,431 \$764,006 0.3714  18 \$436,575 \$327,431 \$764,006 0.3714  18 \$438,404 \$434,803 \$802,206 0.3503  19 \$438,404 \$543,803 \$802,206 0.3503  20 \$51,060,290 \$505,390 \$379,043 \$51,944,723 0.3118  21 \$550,660 \$397,995 \$928,654 0.2942  22 \$557,193 \$417,894 \$975,087 0.2775  23 \$558,502 \$438,789 \$1,023,841 0.6618  24 \$564,305 \$460,729 \$1,075,033 0.2470  25 \$51,413,720 \$645,000 \$483,765 \$2,542,505 0.2330  26 \$677,771 \$507,953 \$1,185,224 0.2198  27 \$774,005 \$588,019 \$51,372,045 0.1866	\$308,98	0.6274	0.62	\$492,485		\$211,065	\$281,420			8
11	\$306,07	0.5919	0.59	\$517,109		\$221,618	\$295,491			9
12 \$342,068 \$256,551 \$598,619 0.4970 13 \$359,171 \$269,387 \$528,550 0.4688 14 \$377,130 \$282,847 \$569,977 0.4423 15 \$4,241,160 \$395,986 \$296,990 \$4,934,136 0.4173 16 \$415,786 \$311,839 \$727,625 0.3936 17 \$436,575 \$327,431 \$764,006 0.3774 18 \$458,404 \$343,803 \$902,066 0.3704 19 \$488,404 \$343,803 \$902,066 0.3704 20 \$51,060,290 \$505,390 \$379,003 \$542,317 0.3305 20 \$51,060,290 \$505,390 \$379,003 \$1,944,723 0.3118 21 \$530,660 \$397,995 \$928,654 0.2942 22 \$557,193 \$417,804 \$975,087 0.2775 23 \$585,052 \$438,799 \$1,023,841 \$20 \$266 24 \$564,305 \$460,729 \$1,075,033 0.2470 25 \$51,413,720 \$645,000 \$483,765 \$52,542,505 0.2330 26 \$5774,713 \$507,933 \$51,185,224 0.2198 27 \$711,135 \$533,351 \$1,244,485 0.2074 28 \$774,6991 \$560,018 \$1,367,100 0.1956 29 \$784,007 \$588,019 \$51,372,045 0.1846	\$303,19	0.5584	0.55	\$542,965		\$232,699	\$310,266			10
13 \$359,171 \$269,378 \$528,550 0.4688 14 \$377,130 \$282,847 \$569,977 0.4423 15 \$54,241,160 \$395,986 \$296,990 \$4,934,136 \$0.4173 16 \$415,786 \$311,899 \$777,625 0.3936 17 \$436,575 \$327,431 \$764,006 0.3714 18 \$436,575 \$327,431 \$764,006 0.3734 18 \$438,304 \$343,303 \$802,206 0.3503 19 \$481,324 \$360,993 \$842,317 0.3305 20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 21 \$550,660 \$397,905 \$928,654 0.2942 22 \$557,193 \$417,894 \$975,087 0.2775 23 \$585,052 \$438,789 \$1,023,841 0.2618 24 \$543,05 \$460,729 \$1,075,033 0.2470 25 \$51,413,720 \$565,000 \$483,765 \$2,542,505 0.2330 26 \$577,771 \$507,953 \$1,185,224 0.2198 27 \$711,135 \$533,351 \$1,124,485 0.2074 28 \$774,691 \$560,018 \$1,366,710 0.1956 29 \$784,005 \$588,019 \$1,372,045 0.1846	\$300,33	0.5268	0.52	\$570,113		\$244,334	\$325,779			11
14 \$377,130 \$282,847 \$659,977 0.4423 \$15 \$4,241,160 \$395,986 \$296,990 \$4,394,136 0.4173 \$16 \$345,896 \$256,990 \$54,394,136 0.4173 \$17 \$456,575 \$327,431 \$764,006 0.3714 \$18 \$458,404 \$343,803 \$802,206 0.3503 \$19 \$481,324 \$360,993 \$842,317 \$1302 \$20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 \$19 \$458,244 \$363,993 \$842,317 0.3305 \$20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 \$10 \$458,404 \$4	\$297,51	0.4970	0.49	\$598,619		\$256,551	\$342,068			12
15 \$4,241,160 \$395,986 \$296,990 \$4,934,136 0.4173  16 \$415,786 \$111,839 \$777,625 0.3936  17 \$436,757 \$327,431 \$764,006 0.3714  18 \$458,404 \$343,803 \$802,206 0.3503  19 \$481,324 \$860,993 \$842,317 0.3305  20 \$51,060,290 \$505,390 \$379,043 \$1,944,723 0.3118  21 \$530,660 \$397,995 \$928,654 0.2942  22 \$557,193 \$411,894 \$975,687 0.2775  23 \$585,052 \$488,789 \$1,023,841 0.2618  24 \$514,305 \$460,729 \$1,075,033 0.2470  25 \$51,413,720 \$645,020 \$483,765 \$2,542,505 0.2330  26 \$577,771 \$807,953 \$1,185,254 0.2198  27 \$711,135 \$533,351 \$1,244,485 0.2074  28 \$746,691 \$560,018 \$1,367,10 0.1956  29 \$754,005 \$588,09 \$1,372,045 0.1846	\$294,66	0.4688	0.46	\$628,550		\$269,378	\$359,171			13
16	\$291,90	0.4423	0.44	\$659,977		\$282,847	\$377,130			14
17 \$436,575 \$327,431 \$764,006 0.3714 \$18 \$436,401 \$343,803 \$802,206 0.3503 \$19 \$481,324 \$360,993 \$842,317 0.3305 \$20 \$51,060,290 \$505,390 \$379,043 \$51,944,723 0.3118 \$10 \$550,660 \$397,905 \$928,664 0.2942 \$555,093 \$41,804 \$975,087 0.2775 \$22 \$555,193 \$417,804 \$975,087 0.2775 \$23 \$585,052 \$438,789 \$1,023,841 0.2618 \$44 \$614,305 \$460,729 \$1,075,033 0.2470 \$25 \$51,413,720 \$645,000 \$483,765 \$2,542,505 \$0.2330 \$26 \$577,777 \$507,953 \$1,185,224 0.2198 \$27 \$711,135 \$533,351 \$1,244,485 0.2074 \$28 \$746,691 \$540,09 \$560,018 \$1,365,710 0.1956 \$29 \$784,005 \$88,09 \$51,372,045 0.1846	\$2,059,01	0.4173	0.41	\$4,934,136		\$296,990	\$395,986	\$4,241,160		15
18         \$458,404         \$343,803         \$802,206         0.3503           19         \$481,324         \$860,993         \$842,317         0.3505           20         \$1,060,290         \$505,390         \$379,043         \$1,944,723         0.3118           21         \$530,660         \$397,995         \$928,654         0.2942           22         \$557,193         \$417,804         \$975,687         0.2775           23         \$585,052         \$488,789         \$1,023,841         2618           24         \$614,305         \$460,729         \$1,075,033         0,2470           25         \$1,413,720         \$645,020         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$807,933         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,005         \$88,019         \$1,372,045         0.1846	\$286,39	0.3936	0.39	\$727,625		\$311,839	\$415,786			16
19 \$481,324 \$360,993 \$842,317 0.3305 \$20 \$1,060,290 \$505,390 \$379,043 \$1,944,723 0.3118 \$22 \$530,660 \$1,944,723 \$1,944 \$975,087 0.2775 \$23 \$585,052 \$438,789 \$1,023,841 0.2618 \$460,729 \$1,073,643 0.2442 \$25 \$51,413,720 \$645,002 \$483,765 \$2,242,505 0.2330 \$25 \$51,413,720 \$645,002 \$483,765 \$2,242,505 0.2330 \$26 \$577,771 \$507,953 \$1,185,224 0.2198 \$27 \$711,135 \$583,351 \$1,244,485 0.2074 \$28 \$746,691 \$556,018 \$1,367,10 0.1956 \$29 \$784,005 \$588,019 \$5,1372,045 0.1846	\$283,75	0.3714	0.37	\$764,006		\$327,431	\$436,575			17
20         \$1,060,290         \$505,390         \$379,043         \$1,944,723         0.3118           21         \$530,660         \$937,965         \$928,664         0.2942           22         \$557,193         \$417,894         \$975,087         0.2775           23         \$588,052         \$438,789         \$1,023,841         0.2618           24         \$614,305         \$460,729         \$1,075,033         0.2470           25         \$1,413,720         \$645,000         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$507,933         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,366,710         0.1966           29         \$784,005         \$88,019         \$1,372,045         0.1846	\$281,01	0.3503	0.35	\$802,206		\$343,803	\$458,404			18
21         \$530,660         \$997,995         \$928,684         0.2942           22         \$557,193         \$417,884         \$975,087         0.2775           23         \$585,062         \$488,789         \$1,023,841         0.2618           24         \$614,305         \$460,729         \$1,075,033         0.2470           25         \$1,413,720         \$645,020         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$507,953         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,005         \$588,019         \$1,372,045         0.1846	\$278,38	0.3305	0.33	\$842,317		\$360,993	\$481,324			19
22         \$557,193         \$417,894         \$975,087         0.2775           23         \$585,062         \$483,789         \$1,023,841         0.2618           24         \$614,055         \$460,729         \$1,075,033         0.2470           25         \$1,413,720         \$645,020         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$507,953         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,005         \$588,019         \$1,372,045         0.1846	\$606,36	0.3118	0.31	\$1,944,723		\$379,043	\$505,390	\$1,060,290		20
23 \$\$85,052 \$438,789 \$1,023,841 0.2618 \$460,729 \$1,073,603 0.2470 \$25 \$1,413,720 \$564,502 \$488,765 \$2,542,505 0.2330 \$26 \$571,271 \$507,953 \$1,185,224 0.2198 \$711,135 \$533,351 \$1,244,485 0.2074 \$28 \$746,691 \$574,695 \$588,019 \$1,372,045 0.1846 \$29 \$784,005 \$588,019 \$1,372,045 0.1846	\$273,21	0.2942	0.29	\$928,654		\$397,995	\$530,660			21
24         \$614,305         \$460,729         \$1,075,033         0.2470           25         \$1,413,720         \$645,020         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$507,953         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,026         \$588,019         \$1,372,045         0.1846	\$270,58	0.2775								22
24         \$614,305         \$460,729         \$1,075,033         0.2470           25         \$1,413,720         \$645,020         \$483,765         \$2,542,505         0.2330           26         \$677,271         \$507,953         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,026         \$588,019         \$1,372,045         0.1846	\$268,04									
26         \$677,271         \$507,953         \$1,185,224         0.2198           27         \$711,135         \$533,351         \$1,244,485         0.2074           28         \$746,691         \$560,018         \$1,306,710         0.1956           29         \$784,005         \$88,019         \$1,372,045         0.1846	\$265,53	0.2470								
27         \$711,135         \$533,351         \$1,244,485         0,2074           28         \$746,691         \$560,018         \$1,366,710         0.1956           29         \$784,005         \$588,019         \$1,372,045         0.1846	\$592,40	0.2330						\$1,413,720		25
27         \$711,135         \$533,351         \$1,244,485         0,2074           28         \$746,691         \$560,018         \$1,366,710         0.1956           29         \$784,005         \$588,019         \$1,372,045         0.1846	\$260,51	0.2198	0.21	\$1,185,224		\$507,953	\$677.271			26
28 \$ \$746,691 \$560,018 \$1,306,710 0.1956 29 \$ \$784,026 \$588,019 \$1,372,045 0.1846	\$258,10									
29 \$784,026 \$588,019 \$1,372,045 0.1846	\$255,59									
	\$253,28						The second secon			
	-\$8,836,90				-\$55,202,420			\$3,004,155		
			100000							

## **OWNERSHIP ISSUES**

# \$10M Capital Project Translates to \$130M Investment





Plan, Design, Construct
Occupy and Adjust
Renovate

3% Inflation over that time

Modernize

Reconstruct Recyc

ruct **\$ 1.86 B** 



**PROCESS** 

PLAYERS

FEASIBILITY

PROGRAMMING

FOLLOW-UP

TRENDS

## PITFALLS AND ISSUES

- Insufficient Space Planning (non-assignable spaces)
- Costs
- Buy-in
- Review Process
- Change in Players
- Program Creep
- Growth Issues
- Time Constraints
- Technology





**PROCESS** 

**PLAYERS** 

FEASIBILITY

PROGRAMMING

FOLLOW-UP

TRENDS

- Process Review
- Budget Review
- Facilities Operations



**Project Planning** 

## **CONTINUOUS IMPROVEMENT**

- 11 Month Inspection
- Long Range Plan Updates



A Lack of Direction?



PROCESS

PLAYERS

FEASIBILITY

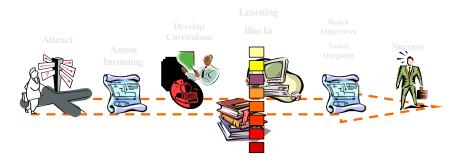
PROGRAMMING

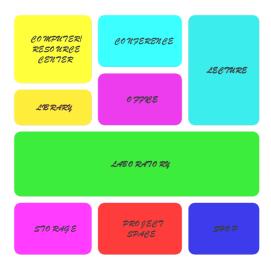
FOLLOW-UP

TRENDS

## TRENDS AND CONSIDERATIONS

- ICL's Model
- Flexibility
- 100 year shells
- Public Private Partnerships
- Architect,ContractorPartnerships
- Schematic Design







# THANK YOU

ISSUES/WHY

**PROCESS** 

**PLAYERS** 

FEASIBILITY

PROGRAMMING

FOLLOW-UP

TRENDS



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