

## **Town of Dover Community Center**

Building Committee

- Choosing by Advantages
- Relative Cost Comparison

Jan 18, 2021

# Building a vision

## Building consensus

1. Schedule Update -5 mins
2. CBA Process Example -30 min
3. Dover Evaluation Factors -30 min
4. Relative Costs- 15 min
5. BC internal – FAQ

## Schedule Overview: Design Steps

### Schedule

Dec. 1	Public Forum – Program Size
Dec. 7	BC Selects Alternates (4)
Dec. 14	BC Reviews Alts R-1 & N3.1
Dec. 22	BC Reviews Alts R-3 & N2
Dec. 23	Send Cost Estimate Package
Jan. 11	BC Review Plans / Elevations
Jan. 18	BC Reviews CBA Evaluation Matrix
Jan. 18	Initial Cost Estimates
Jan. 25	BC Confirms CBA, Public Mtg Draft
Feb 3	Public Mtg based on CBA
Feb 8 <sup>th</sup>	Based on CBA and Public Feedback, BC Selects 2 Alternates for Schematic

## FEASIBILITY

### Full Layout/ Elevations

#### Evaluation: Alternatives

Selection of (2) preferred alternatives using CBA (includes sustainability)

#### Options

- New Construction (2)
- Renovation/Addition (2)

## SCHEMATIC

### Schematic Design

#### Evaluation: Solutions

Schematic Design/ Site Design  
Accurate SD Cost Estimates  
Recommendation for Town Mtg.

#### Options

- New Construction (1)
- Renovation/Addition (1)

# CBA Evaluation Example

# Choosing-By-Advantages History and Uses

## SOUND DECISION MAKING METHODS

Sound decision making methods include the following elements:

- Clearly define the problem you're trying to resolve
- Include key, reliable facts/data
- Include key viewpoints (decision makers + stakeholders)
- Avoid double/multiple counting
- Achieve consensus that the "correct" decision was reached



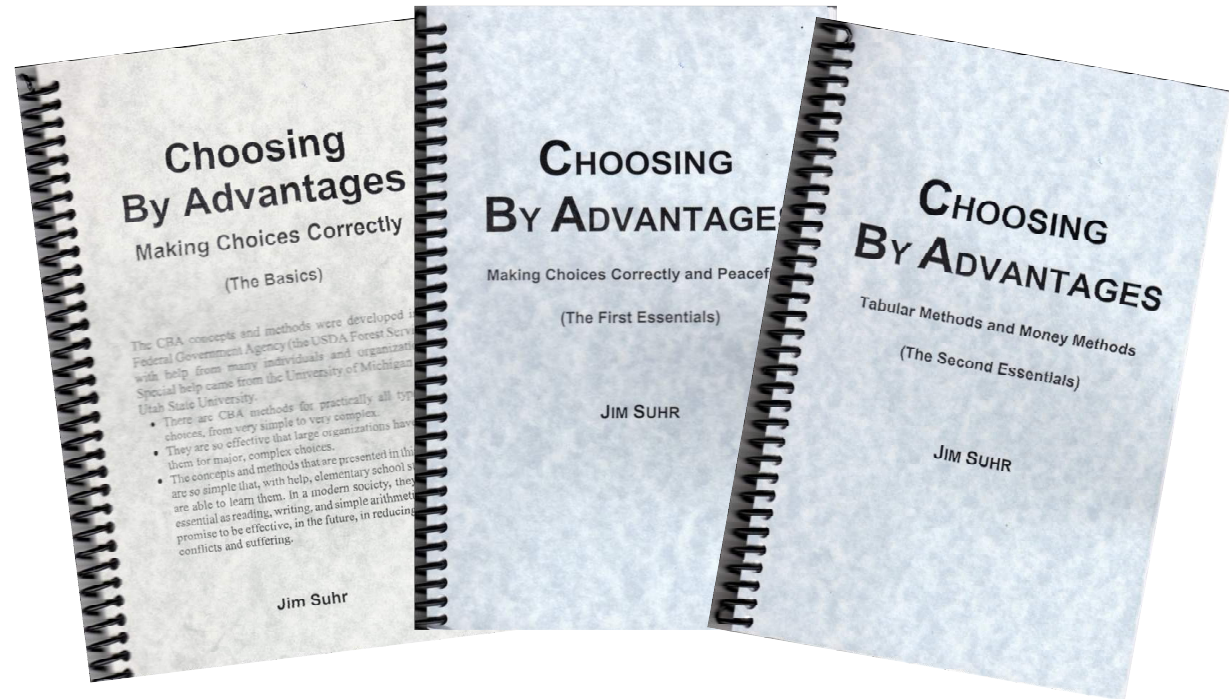
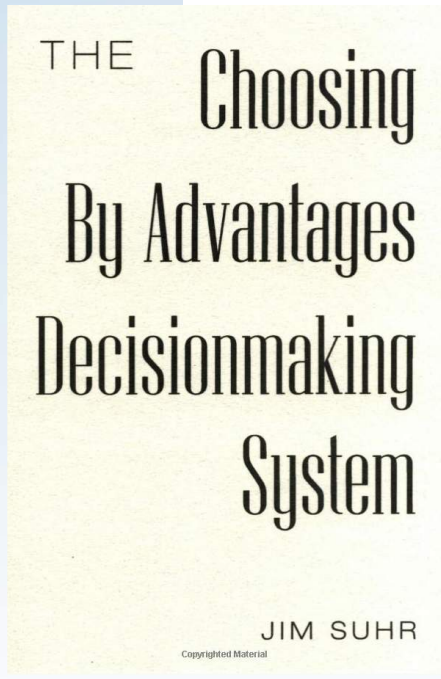


# CHOOSING-BY-ADVANTAGES

## An Introduction

*“Decisions must be made based on the importance of advantages”*

– Jim Suhr



*Courtesy of Massport – Capital Programs & Environmental Affairs*

# CHOOSING-BY-ADVANTAGES

## An Introduction

- Lean process to help facilitate decision making
- Focuses on Relative Advantages
- Identifies multiple factors by which various options / alternatives can be compared
- Attempts to base preferred alternative / option on objectively documented facts

Factor	Criterion	Option 1		Option 2A		Option 2B	
Cost	Cost is lowest possible advantage as estimated. Excludes fees for advantage only.	\$1,400,000 TOTAL \$100K		\$1,400,000 TOTAL \$100K		\$1,400,000 TOTAL \$100K	
Schedule	Shorter schedule duration is more desirable advantage	APPROX. 5 MONTHS Adv: 100		APPROX. 6.5 MONTHS Adv: 100		APPROX. 5 MONTHS Adv: 100	
Construction Logistics/Phasing	Less construction phasing complexity is more desirable advantage	Work same occurs within existing lower, existing no parking area of garage, but larger area than 1 and 2		Work same occurs within existing lower, existing no parking area of garage, but larger area than 1		Work same occurs within existing lower, existing no parking area of garage, but larger area than 1	
Permitting/Code	Less code complexity is more desirable advantage	Minimal code impact		Slightly more complex, due to larger project area		Minimal code impact, but larger area than 1	
Feasibility & Technical Complexity	Less technical complexity is more desirable advantage	Minimal		Builds build-out of lower roadway structure		Builds build-out of lower roadway structure, larger footprint than 2A	
Impacts to Tenants	Less impact to tenants is more desirable advantage	Relocates from 127 to Temporary Structure		Option constructs using space without relocating FAA, but still requires modifications in 17th and 19th floors		Option constructs using space without relocating FAA	
Potential for Program Growth*	Higher square footage is more desirable advantage	North business condition of satisfaction		Adds office and retail floor area, 1350 SF		Adds retail floor area, 750 SF	
Unknowns/Risk	Less risk/unknown is more desirable advantage	Minimal		Requires build-out of lower roadway structure		Requires build-out of lower roadway structure, but additional retail space	
MOST PREFERRED ATTRIBUTES		Option 1		Option 2A		Option 2B	
LEAST PREFERRED ATTRIBUTES		Total Importance of Advantages		Total Importance of Advantages		Total Importance of Advantages	
NEUTRAL/TRANSITIONAL ATTRIBUTES		Imp: 365		Imp: 310		Imp: 390	

Weight

	1A	2A	2B	3	4A	4B
5 COST	6	4	5	2	3	1
5 SCHEDULE	6	4	6	2	3	1
3 LOGISTICS/PHASING	5	5	6	1	3	2
4 PERMITTING/CODE	6	3	5	4	2	1
3 FEASIBILITY/TECHNICAL COMPLEXITY	6	5	4	1	3	2
3 IMPACTS TO TENANTS	1	2	6	2	6	5
2 PROGRAM GROWTH*	1	3	3	4	5	6
1 UNKNOWN	6	3	2	1	2	2

\*Beyond 600 SF (baseline COS)



## CHOOSING-BY-ADVANTAGES

### When to Use?

- Major decisions
- Decisions with multiple alternatives (options)
- Decisions that are complex
- Decisions that have multiple stakeholders
- Decisions where the “thinking process” helps

# Choosing-By-Advantages Process

# CBA LANGUAGE

**Alternative:** Possible decisions, things, plans from which one is to be chosen

**Factor:** Element or component of a decision

**Criteria:** Rule or guideline for judging factors (musts and wants)

**Attribute:** Characteristic of one factor

**Advantage:** Difference between the attributes of two or more attributes

**Paramount Advantage:** Most important advantage among all

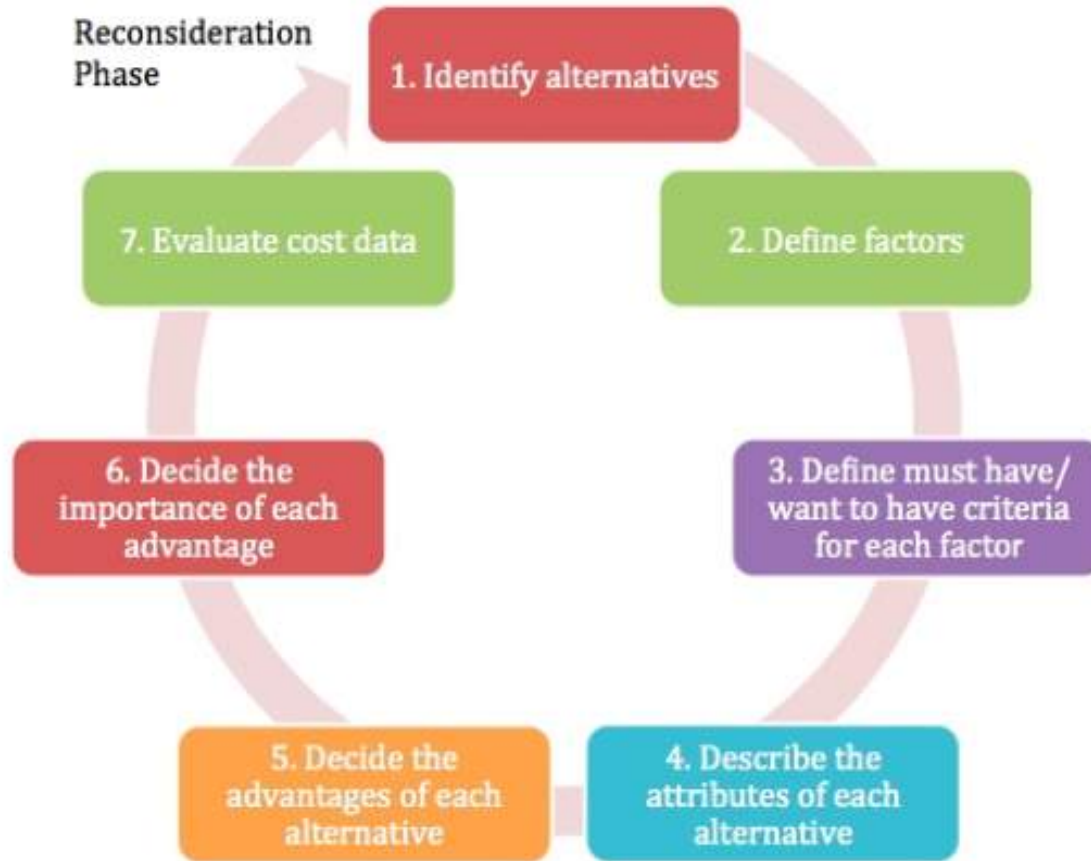
**Importance:** Stakeholders' vision of value of an advantage

**Anchoring Principle:** Use paramount advantage as an anchoring point to weigh other advantages

# CBA MATRIX

Factors (Criteria)	Alternative 1		Alternative 2		Alternative 3	
Factor A	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Factor B	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Factor C	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

# CBA PROCESS



# 1 – IDENTIFY ALTERNATIVES

Step 1  
Identify  
Alternatives  
(options) that  
will be  
compared

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Factor A	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Factor B	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Factor C	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	



## 2 – DEFINE FACTORS

### Step 2

Define Factors  
(components) for  
decision making

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Stability	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Durability	Attribute		Attribute		Attribute	
(Criteria)	Advantage	Imp	Advantage	Imp	Advantage	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

### 3 – DEFINE CRITERIA FOR EACH FACTOR

**Step 3**  
Define  
Criteria (rules  
and  
guidelines) for  
judging  
factors

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	Attribute		Attribute		Attribute	
Lighter is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Stability	Attribute		Attribute		Attribute	
Most stable is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Durability	Attribute		Attribute		Attribute	
Most durable is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

## 4 – DEFINE ATTRIBUTES FOR EACH ALTERNATIVE

### Step 4-1

Define Attributes (characteristics) for each Factor based on defined Criteria

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	<u>300 lb</u>		150 lb		50 lb	
Lighter is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Stability	<u>Stable</u>		<u>Stable</u>		Most Stable	
Most stable is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Durability	Most Durable		<u>Fairly Durable</u>		Durable	
Most durable is better	Advantage	Imp	Advantage	Imp	Advantage	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

### Step 4-2

Underline least preferred Attribute for each Factor

### Step 5-1

List the Advantage for each Factor compared to least preferred

Note: There is no advantage to least preferred Attribute

### Step 5-2

Highlight most preferred Advantage for each Factor

## 5 – DECIDE ON ADVANTAGES FOR EACH FACTOR

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	<u>300 lb</u>		150 lb		50 lb	
Lighter is better	-	Imp	150 lb	Imp	250 lb	Imp
Stability	<u>Stable</u>		<u>Stable</u>		Most Stable	
Most stable is better	-	Imp	-	Imp	Best	Imp
Durability	Most Durable		<u>Fairly Durable</u>		Durable	
Most durable is better	Best	Imp	-	Imp	Good	Imp
Total Importance		Total Imp		Total Imp		Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

## 6 – DECIDE ON IMPORTANCE OF EACH FACTOR

**Step 6-1**  
Define the  
Paramount  
Advantage (the  
most important  
advantage of all)

**Step 6-2**  
Assign “0” to  
the least  
preferred  
Attributes  
(Underlined)

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	<u>300 lb</u>		150 lb		50 lb	
Lighter is better	-	0	150 lb	Imp	250 lb	Imp
Stability	<u>Stable</u>		<u>Stable</u>		<u>Most Stable</u>	
Most stable is better	-	0	-	0	Best	100
Durability	Most Durable		<u>Fairly Durable</u>		Durable	
Most durable is better	Best	Imp	-	0	Good	Imp
Total Importance	Total Imp		Total Imp		Total Imp	Total Imp
Capital Cost	\$\$\$		\$\$\$		\$\$\$	

## 6 – DECIDE ON IMPORTANCE OF EACH FACTOR

### Step 6-3 & 6-4

Decide on Importance of each Factor's Advantage against the Paramount Advantage

### Step 6-5

Sum for Total Importance of each Alternative

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	<u>300 lb</u>		150 lb		50 lb	
Lighter is better	-	0	150 lb	30	250 lb	60
Stability	<u>Stable</u>		<u>Stable</u>		Most Stable	
Most stable is better	-	0	-	0	Best	100
Durability	Most Durable		<u>Fairly Durable</u>		Durable	
Most durable is better	Best	80	-	0	Good	50
Total Importance		80		30		210
Capital Cost	\$\$\$		\$\$\$		\$\$\$	



## 7 – EVALUATE COST DATA

Step 7-1  
Add Cost Data

Step 7-2  
Evaluate Cost  
Data

Factors (Criteria)	Concrete Canoe		Wooden Canoe		Fiberglass Canoe	
Weight	<u>300 lb</u>		150 lb		50 lb	
Lighter is better	-	0	150 lb	30	250 lb	60
Stability	<u>Stable</u>		<u>Stable</u>		Most Stable	
Most stable is better	-	0	-	0	Best	100
Durability	Most Durable		<u>Fairly Durable</u>		Durable	
Most durable is better	Best	80	-	0	Good	50
Total Importance		80		30		210
Capital Cost	\$2000		\$3000		\$1000	

Recommend

## CHOOSING-BY-ADVANTAGES OOPS

### What could go wrong?

- Not considering ALL alternatives first
- Not representing ALL stakeholder factors
- Not having appropriate stakeholders in the session
- Not anchoring with data
- Letting “strong” voices control the direction
- Not arguing about the rankings/weighting – creative tension is good
- Double counting costs in the factors

# **Dover Evaluation Factors**

# Choosing by Advantages Factors & Criterion

Most Important Advantage

Paramount Advantage

Feasibility Study - Selecting 1 New and 1 Renovation Alternatives			Alternatives: New Construction			Alternatives: Renovation of Existing Building(s)				
			N2 - New Split Level		N3.1 New - Two Story		R1 - Renovation Vertical Lobby		R3 - Renovation Save 1910	
General										
1	Factor	Universal Design	Attrib.: 1 stair/1 ramp, no stairwell, no elevator		Attrib.: 1 stair/1 ramp, 2 switchback stairs, 1 elevator		Attrib.: 1 switchback stairwell, 1 triple run stair, 1 elevator, Least Preferred		Attrib.: 1 stair/1 ramp, 2 switchback stairs, 1 elevator	
	Criterion	Fewest level changes with stairs, ramps & elevators	Advant.: Best		IMP.		IMP.		Advant.: Better	
Functionality										
2	Factor	Program Adherence to Space Opt 3	Attrib.: New construction allows best match to program		Attrib.: New construction allows best match to program		Attrib.: some programs oversized with available space, Least Preferred		Attrib.: Mostly right sized (exception meeting space)	
	Criterion	Matches desired program requirements & right sizing	Advant.: Better		IMP.		IMP.		Advant.: Good	
3	Factor	Advantageous Adjacencies	Attrib.: CoA near Community Room, One level so no overhead noises, Parks & Rec next to entry		Attrib.: CoA near Community Room, Some overhead noise, Parks & Rec away from entries		Attrib.: CoA separate level from Community Room, Some overhead noise, Parks & Rec far from entry, Least Preferred		Attrib.: CoA far from Community Room, no overhead noise, Parks & Rec next to entry	
	Criterion	Most qualities: CoA near Community Room, Good Separation of Noisy Activities, Parks & Rec near entrance	Advant.: Best		IMP.		IMP.		Advant.: Better	
4	Factor	Compactness / Optimized for Expansion	Attrib.: Footprint is least compact and leaves little room to the South for expansion		Attrib.: Footprint is most compact and leaves most room to the South for expansion		Attrib.: Footprint is compact but orientation leaves little room to the South for expansion, can expand to the east		Attrib.: Footprint is very compact and leaves room to the South for expansion	
	Criterion	The most compact building is best, most room for expansion is best	Advant.: Good		IMP.		IMP.		Advant.: Better	
5	Factor	Relation of entry and drop-off / Accessible parking	Attrib.: Medium-sized forecourt and limited view of Entry		Attrib.: Large forecourt and clear view of Entry		Attrib.: Smallest forecourt but clear view of Entry, Least Preferred		Attrib.: Large Forecourt and good view of Entry	
	Criterion	Largest forecourt & best view to main entrance	Advant.: Good		IMP.		IMP.		Advant.: Better	
6	Factor	Visual Control of entry (ies)	Attrib.: Central Location separate from main parks & rec offices (same level)		Attrib.: Central Location separate from main parks & rec offices (2nd floor)		Attrib.: No Central Location and separate from main parks & rec offices (lower level), Least Preferred		Attrib.: Central Location next to main parks & rec offices	
	Criterion	Central control point nearest to Parks & Rec Offices	Advant.: Better		IMP.		IMP.		Advant.: Best	
7	Factor	Programmed outdoor space	Attrib.: Largest footprint of building, direct access to outdoor spaces from community room and CoA		Attrib.: Smaller footprint of building, direct access to outdoor spaces from community room and CoA		Attrib.: Smaller footprint of building, no direct access to outdoor spaces from community room or CoA, Least Preferred		Attrib.: Smaller footprint of building, direct access to outdoor spaces from community room, CoA no direct access to outside	
	Criterion	Size of building footprint (smaller better) and direct connection to outdoors from CoA & Community Room	Advant.: Good		IMP.		IMP.		Advant.: Better	
Experiential (user experience)										
8	Factor	Creates heart of community	Attrib.: one level and one heart		Attrib.: two levels, one heart		Attrib.: three levels and three hearts, Least Preferred		Attrib.: two levels and two hearts	
	Criterion	Visual connection between welcome area (heart) and other public spaces (fewer hearts & fewer levels are better)	Advant.: Best		IMP.		IMP.		Advant.: Good	
9	Factor	Daylighting, ventilation & connection to outdoors	Attrib.: Good ratio perimeter to program spaces - all new window openings		Attrib.: Best ratio perimeter to program spaces - all new window openings		Attrib.: Good ratio perimeter to program spaces - more spaces on 2nd floor (good existing window size)		Attrib.: Good ratio perimeter to program spaces - combination exists/new, but coal has limited windows, Least Preferred	
	Criterion	Largest ratio of perimeter to program space with windows & largest size of windows	Advant.: Better		IMP.		IMP.		Advant.: Good	
Community										
10	Factor	Town Center	Attrib.: Low pancake massing, unlike 2 story construction of other buildings in Town Center, engages Springdale Ave.		Attrib.: 2 Story massing responds to Town House and engages with Springdale Ave.		Attrib.: 2 Story responds to Town House and saves 1910 building, does not engage Springdale Ave.		Attrib.: 2 story massing and saves historic 1910 building relates well to Town House and Town Center, engages Springdale Ave.	
	Criterion	Building Massing (height) Consistent with Town Center, Orientation engages Springdale Ave.	Advant.: Good		IMP.		IMP.		Advant.: Better	
Sustainability										
11	Factor	Potential SF Roof Area Available for PV's	Attrib.: 16,353 sf		Attrib.: 11,500 sf		Attrib.: 2,507 sf		Attrib.: 8,212 sf	
	Criterion	Largest SF is Better	Advant.: Best: 13,846 sf more than least preferred		IMP.		IMP.		Advant.: Good: 5,705 sf more than least preferred	
12	Factor	Resiliency: Co-location of shelter spaces	Attrib.: No elevator required, COA/ Kitch/ Comm Room/ Meeting & Flex are contiguous		Attrib.: Elevator optional, COA/ Kitch/ Comm Room/ Meeting are contiguous (Flex is upstairs)		Attrib.: Elevator required, COA on different level from Kitch/ Comm Room/ Meeting & Flex		Attrib.: Elevator optional, COA next to Meeting, but separate from Kitch/ Comm Room (Flex upstairs)	
	Criterion	Adjacency of COA suite, Community Room, Kitchen, Meeting and Flex Rooms to run efficiently	Advant.: Best		IMP.		IMP.		Advant.: Good	
Total Importance of Advantages (IoAs)			Total IOA 0		Total IOA 0		Total IOA 0		Total IOA 0	

# Choosing by Advantages Factors & Criterion



## Feasibility Study - Selecting 1 New and 1 Renovation Alternatives

### Functionality

2	Factor	Program Adherence to Space Opt 3
	Criterion	Matches desired program requirements & right sizing
3	Factor	Advantageous Adjacencies
	Criterion	Most qualities: CoA near Community Room, Good Separation of Noisy Activities, Parks & Rec near entrance
4	Factor	Compactness / Optimized for Expansion
	Criterion	The most compact building is best, most room for expansion is best
5	Factor	Relation of entry and drop-off / Accessible parking
	Criterion	Largest forecourt & best view to main entrance
6	Factor	Visual Control of entry (ies)
	Criterion	Central control point nearest to Parks & Rec Offices
7	Factor	Programmed outdoor space
	Criterion	Size of building footprint (smaller better) and direct connection to outdoors from CoA & Community Room

## Alternatives: New Construction

N2 - New Split Level		N3.1 New - Two Story	
Attrib.:	New construction allows best match to program	Attrib.:	New construction allows best match to program
Advant:	Better IMP.	Advant:	Better IMP.
Attrib.:	CoA near Community Room, One level so no overhead noises, Parks & Rec next to entry	Attrib.:	CoA near Community Room, Some overhead noise, Parks & Rec away from entries
Advant:	Best IMP.	Advant:	Good IMP.
Attrib.:	Footprint is least compact and leaves little room to the South for expansion	Attrib.:	Footprint is most compact and leaves most room to the South for expansion
Advant:	Good IMP.	Advant:	Best IMP.
Attrib.:	Medium-sized forecourt and limited view of Entry	Attrib.:	Large forecourt and clear view of Entry
Advant:	Good IMP.	Advant:	Best IMP.
Attrib.:	Central Location separate from main parks & rec offices (same level)	Attrib.:	Central Location separate from main parks & rec offices (2nd floor)
Advant:	Better IMP.	Advant:	Good IMP.
Attrib.:	Largest footprint of building, direct access to outdoor spaces from community room and CoA	Attrib.:	Smaller footprint of building, direct access to outdoor spaces from community room and CoA
Advant:	Good IMP.	Advant:	Best IMP.

## Alternatives: Renovation of Existing Building(s)

R1 - Renovation Vertical Lobby		R3 - Renovation Save 1910	
Attrib.:	<u>some programs oversized with available space</u> Least Preferred	Attrib.:	Mostly right sized (exception meeting space)
Advant:	IMP.	Advant:	Good IMP.
Attrib.:	<u>CoA separate level from Community Room, Some overhead noise, Parks &amp; Rec far from entry</u> Least Preferred	Attrib.:	CoA far from Community Room, no overhead noise, Parks & Rec next to entry
Advant:	IMP.	Advant:	Better IMP.
Attrib.:	<u>Footprint is compact but orientation leaves little room to the South for expansion, can expand to the east</u>	Attrib.:	Footprint is very compact and leaves room to the South for expansion
Advant:	IMP.	Advant:	Better IMP.
Attrib.:	<u>Smallest forecourt but clear view of Entry</u> Least Preferred	Attrib.:	Large Forecourt and good view of Entry
Advant:	IMP.	Advant:	Better IMP.
Attrib.:	<u>No Central Location and separate from main parks &amp; rec offices (lower level)</u> Least Preferred	Attrib.:	Central Location next to main parks & rec offices
Advant:	IMP.	Advant:	Best IMP.
Attrib.:	<u>Smaller footprint of building, no direct access to outdoor spaces from community room or CoA</u> Least Preferred	Attrib.:	Smaller footprint of building, direct access to outdoor spaces from community room, CoA no direct access to outside
Advant:	IMP.	Advant:	Better IMP.

# Criteria for Success – For Evaluation / Choosing by Advantages

## General

Prerequisite	Project is within the Town's fixed budget of approximately \$13M, new or renovation
Prerequisite	The building and site comply with all the Town bylaws and Town master plan goals
Universal Design	Provides full A.D.A. and MAAB compliance, and pursue universal design principles
Schematic Design	Maximizes grant opportunities

Cost is applied  
at end of CBA  
process

## Functionality

Adherence to Space Option 3	Well-designed with efficient layout and maximal percentage of space (area) with flexible uses
Advantageous adjacencies	Well-designed with efficient layout and maximal percentage of space (area) with flexible uses
Prerequisite	Provides for multi-generational programming (babies to seniors)
Prerequisite	Provides offices for Council On Aging and Park & Recreation
Compactness/Optimized for expansion	Project meets the present service needs of the community and those of the next 20 years
Relation of entry to drop-off / parking	Provides a clearly identifiable and universally accessible entrance
Visual control of entry(ies)	Provides a Welcome Desk at main entry for central control
Prerequisite	Provides efficiency and ease of workflow for the staff
Programmed outdoor space	Creates programmable exterior space



# Criteria for Success

## Experiential (user experience)

Prerequisite

Creates a warm, safe, secure, and welcoming atmosphere for residents and staff)

Creates heart of community

Creates an open environment that encourages residents to meet, network and work

Schematic Design

Has aesthetically pleasing architecture: rooms feel light; spacious; and connected to the outdoors

Daylighting, ventilation & connection to outdoors

Healthy interior environment (including foreseeable pandemic conditions) *using Well/ LEED framework*; mitigates airborne pollutants; maximizes operable windows (for ventilation); maximizes comfortable daylighting, uses healthy building materials, *connections to outdoors*

## Community

Addresses Town Center

Building and site are architecturally harmonious with the local architecture and will be described as architecturally charming and graceful, vibrant, appealing, and appropriate for Dover

Schematic Design

Building and site inspires community pride

Schematic Design

Building and site development encourage community engagement and ongoing involvement, as focal point of community life

Prerequisite

Serves the whole, multi-generational community

Prerequisite

Maximize stakeholder participation in study process

# Criteria for Success

## Sustainability

Feasibility

Energy efficient, environmentally friendly building with sustainable energy systems with an ease to operate

Schematic Design

Minimum 20% energy savings over existing building to support Dover's MA commitment as a Green Community

Usable area for PV

Solar ready design, while respecting mature trees

Schematic Design

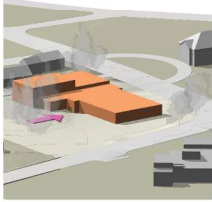
Utilize durable and easily maintainable building materials

Co-location of shelter spaces

Resiliency: robust infrastructure to support the community in weather event such as power-loss or heat-wave. Clustering of shelter spaces: Community, Kitchen, Flex Spaces, Meeting and COA suite

## N2: New Split Level

### Characteristics



### Floor Plan

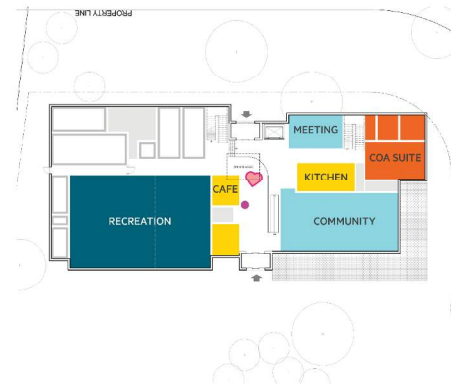


## N3.1: New Two Story

### Characteristics



### First Floor Plan



### Second Floor Plan

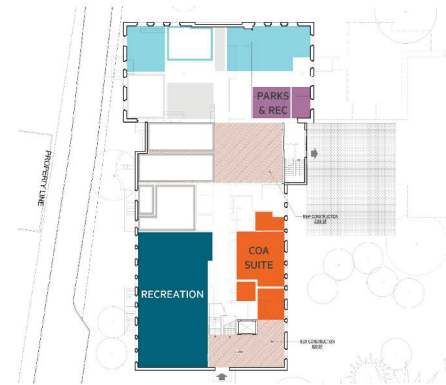


## R1: Renovation - Vertical Lobby

### Characteristics



### First Floor Plan

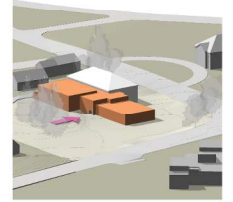


### Second Floor Plan

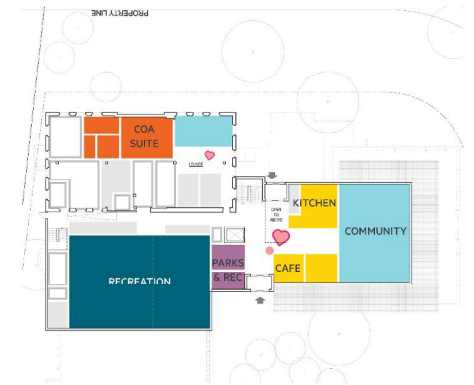


## R3: Renovation - Save 1910

### Characteristics



### First Floor Plan



### Second Floor Plan

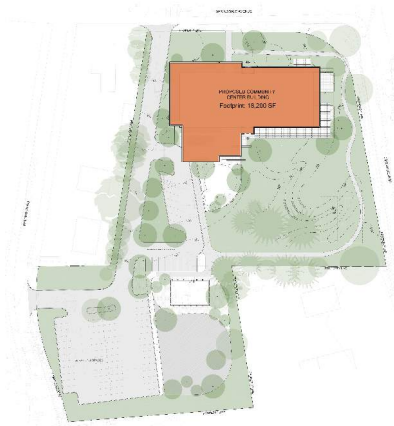


## New: Single Story (N2)



### COMPACTNESS / OPTIMIZED FOR EXPANSION

Footprint is least compact and leaves little room to the South for expansion



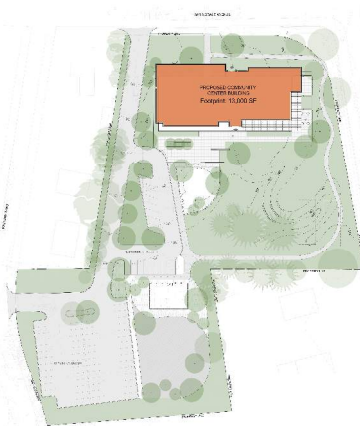
Footprint: 18,200 sf

## New: Two Story (N3.1)



### COMPACTNESS / OPTIMIZED FOR EXPANSION

Footprint is most compact and leaves most room to the South for expansion



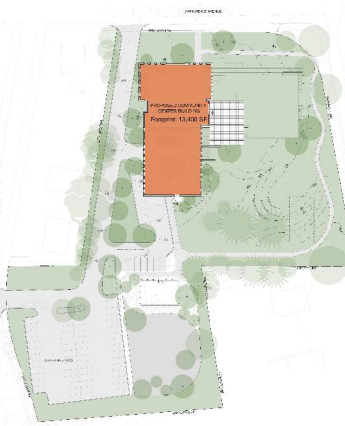
Footprint: 13,000 sf

## Reno: Save the Most (R1)



### COMPACTNESS / OPTIMIZED FOR EXPANSION

Footprint is compact and but orientation leaves little room to the South for expansion, can expand to the East.



Footprint: 13,400 sf

## Reno: Save the 1910 (R3)



### COMPACTNESS / OPTIMIZED FOR EXPANSION

Footprint is very compact and leaves room to the South for expansion



Footprint: 13,800 sf

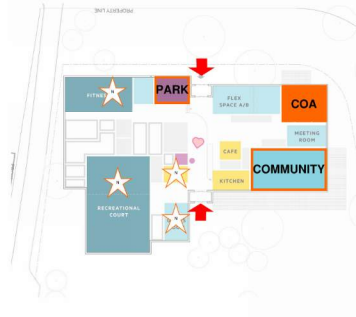
## New: Single Story (N2)



### ADVANTAGEOUS ADJACENCIES

COA near Community Room, One level so no overhead noises, Parks & Rec next to entry

#### Floor Plan



## New: Two Story (N3.1)



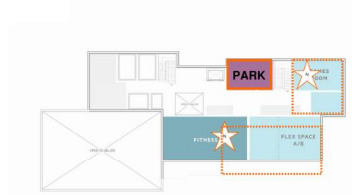
### ADVANTAGEOUS ADJACENCIES

COA near Community Room, Some overhead noise, Parks & Rec away from entries

#### First Floor Plan



#### Second Floor Plan



## Reno: Save the Most (R1)



### ADVANTAGEOUS ADJACENCIES

COA separate level from Community Room, Some overhead noise, Parks & Rec far from entry

#### First Floor Plan



#### Second Floor Plan



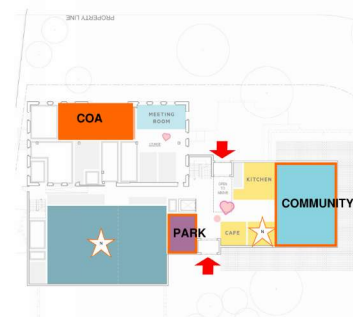
## Reno: Save the 1910 (R3)



### ADVANTAGEOUS ADJACENCIES

COA far from Community Room, no overhead noise, Parks & Rec next to entry

#### First Floor Plan



#### Second Floor Plan



## New: Single Story (N2)

### Single Story (N2)



#### RESILIENCY: CO-LOCATION OF SHELTER SPACES

No elevator required  
COA/ Kitchen/ Community Room/ Meeting & Flex are contiguous

#### Floor Plan



## New: Two Story (N3.1)

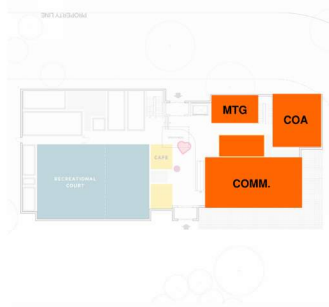
### Two Story (N3.1)



#### RESILIENCY: CO-LOCATION OF SHELTER SPACES

Elevator optional  
COA/ Kitchen/ Community Room/ Meeting are contiguous (Flex is upstairs)

#### First Floor Plan



#### Second Floor Plan



## Reno: Save the Most (R1)

### Save the Most (R1)



#### RESILIENCY: CO-LOCATION OF SHELTER SPACES

Elevator required  
COA on different level from Kitchen/ Community Room/ Meeting & Flex

#### First Floor Plan



#### Second Floor Plan



## Reno: Save the 1910 (R3)

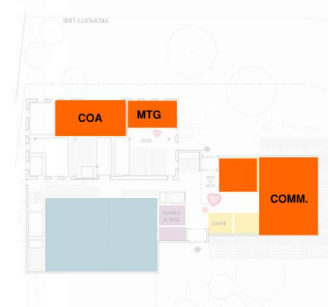
### Save the 1910 (R3)



#### RESILIENCY: CO-LOCATION OF SHELTER SPACES

Elevator optional  
COA next to Meeting, but separate from Kitchen/ Community Room (Flex upstairs)

#### First Floor Plan



#### Second Floor Plan





# / Relative Costs

## Cost Estimate Key Variables\*

- This is a “high level” estimate based on similar public projects in MA, as the drawings are only conceptual.
- The values for each option are best understood relative to the others, as the Designer will reduce the costs for the selected options during Schematic Design.
- The baseline for this study is the \$13M project costs established at Nov. 2019 Town Meeting and this includes all costs for the Town (construction, engineering, furniture/equipment, contingency)
- For public projects in MA, construction costs are usually 74% of the project costs, which is equal to \$9.6M
- The estimator was able to do more detailed quantity take-offs for the New Construction options as the amount of interior renovation work is only generally shown this stage
- Site costs are particularly high for this project as it has unusual requirements like a septic system (~\$150K) and a fire protection water storage system (~ \$300K)
- Hazardous waste disposal is a constant value for all options
- The renovation options have higher demolition costs, reflecting the higher costs of selective demolition (vs. knocking the building down)
- The additions on R1 are interior to the 1931 building and between the two buildings, either way this will require shoring of the existing foundations. This cost is reflected in the higher \$425/sf cost.

\* This slide was added post-meeting to record spoken commentary that introduced the Cost Estimate Summary

# Cost Estimate Summary

## NEW CONSTRUCTION

	Single Story (N2)		Two Story (N3.1)	
	Reno Area		Reno Area	
	New Const.	18,200 sf	New Const.	19,200 sf
Renovation	\$ 6,700,786	\$368 /sf	\$ 7,161,747	\$373 /sf
Addition				
Bldg/Selective Demo	\$ 298,545		\$ 298,545	
Hazardous Waste	\$ 398,060		\$ 398,060	
Sitework	\$ 2,128,078		\$ 2,128,078	
Direct Costs	\$ 9,525,469		\$ 9,986,430	
Overhead/ mark-up	\$ 3,090,274	32%	\$ 3,239,820	32%
Total Construction*	\$ 12,615,743	\$693 /sf	\$ 13,226,250	\$689 /sf
Budget =\$9,600,000				
Soft Costs (estimated)	\$ 4,468,076		\$ 4,684,297	
Total Project	\$ 17,083,819		\$ 17,910,547	

## RENOVATION

	Save the Most (R1)		Save 1910 (R3)	
	Reno Area		Reno Area	
	New Const.	19,767 sf	New Const.	9,022 sf
		6,233 sf		10,778 sf
	\$ 4,555,009	\$230 /sf	\$ 1,948,493	\$216 /sf
	\$ 2,649,025	\$425 /sf	\$ 4,041,750	\$375 /sf
	\$ 548,302		\$ 445,757	
	\$ 398,060		\$ 398,060	
	\$ 1,991,231		\$ 1,991,231	
	\$ 10,141,627		\$ 8,825,291	
	\$ 3,290,169	32%	\$ 2,863,120	32%
	\$ 13,431,796	\$517 /sf	\$ 11,688,411	\$590 /sf
	\$ 4,757,094		\$ 4,139,646	
	\$ 18,188,890		\$ 15,828,057	

\* Construction Budget based on 74% of Total Project Budget of \$13,000,000

## Cost Estimate Summary

NEW CONSTRUCTION					RENOVATION			
Single Story		Two Story			Save the Most		Save 1910	
Reno Area		Reno Area			Reno Area 19,767 sf		Reno Area 9,022 sf	
New Const. 18,200 sf		New Const. 19,200 sf			New Const. 6,233 sf		New Const. 10,778 sf	
Renovation					\$ 4,555,009	\$230.44 /sf	\$ 1,948,493	\$215.97 /sf
Addition	\$ 6,700,786	\$ 368.18 /sf	\$ 7,161,747	\$ 373.01	\$ 2,649,025	\$425.00 /sf	\$ 4,041,750	\$375.00 /sf
Bldg/Selective Demo	\$ 298,545		\$ 298,545		\$ 548,302		\$ 445,757	
Hazardous Waste	\$ 398,060		\$ 398,060		\$ 398,060		\$ 398,060	
Sitework	\$ 2,128,078		\$ 2,128,078		\$ 1,991,231		\$ 1,991,231	
Direct Costs	\$ 9,525,469		\$ 9,986,430		\$ 10,141,627		\$ 8,825,291	
Mark-up/Overhead	\$ 3,090,274	32%	\$ 3,239,820	32%	\$ 3,290,169	32%	\$ 2,863,120	32%
Total Construction	\$ 12,615,743		\$ 13,226,250		\$ 13,431,796		\$ 11,688,411	
Budget \$9,620,000*	\$693/ sf		\$689/ sf		\$517/ sf		\$590/ sf	

\* Construction Budget based on 74% of Total Project Budget of \$13,000,000



# Other BC Business