Corpus Christi Water Supply Model Updates for Evaluation of BBEST Recommendation

Presentation to Nueces BBASC

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Discussion

- Agreed Order vs. BBEST Recommendation
- Attainment Frequencies – Agreed Order
- CCWSM (a.k.a NUBAY) Model Updates
- Theoretical Safe Yield – BBEST Recommendation
- Attainment Frequencies – BBEST Recommendation

Agreed Order Compared to BBEST Recommendation

2001 TCEQ Agreed Order

- Operational
- Monthly
- 4 Defined Storage Zones
- Based on System Storage
- Below 30% - No Passes
- Salinity & "Spill Banking" Relief

BBEST Recommendation

- Long-Term Simulation
- Seasonal
- 3 Hydrologic Conditions
- No Relation to System Storage
- Passes in all Zones
- No Relief Provisions

Order Compared to BBEST

2001 TCEQ Agreed Order

Sys Stor. %	Jan (acft)	Feb (acft)	Mar (acft)	Apr (acft)	May (acft)	Jun (acft)	Jul (acft)	Aug (acft)	Sep (acft)	Oct (acft)	Nov (acft)	Dec (acft)	Ann. (acft)
>70	2,500	2,500	3,500	3,500	25,500	25,500	6,500	6,000	28,500	20,000	9,000	4,500	138,000
70-40	2,500	2,500	3,500	3,500	23,500	23,000	4,500	5,000	11,500	9,000	4,000	4,500	97,000
40-30	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	14,400
>30	0	0	0	0	0	0	0	0	0	0	0	0	0

2011 BBEST Recommendation

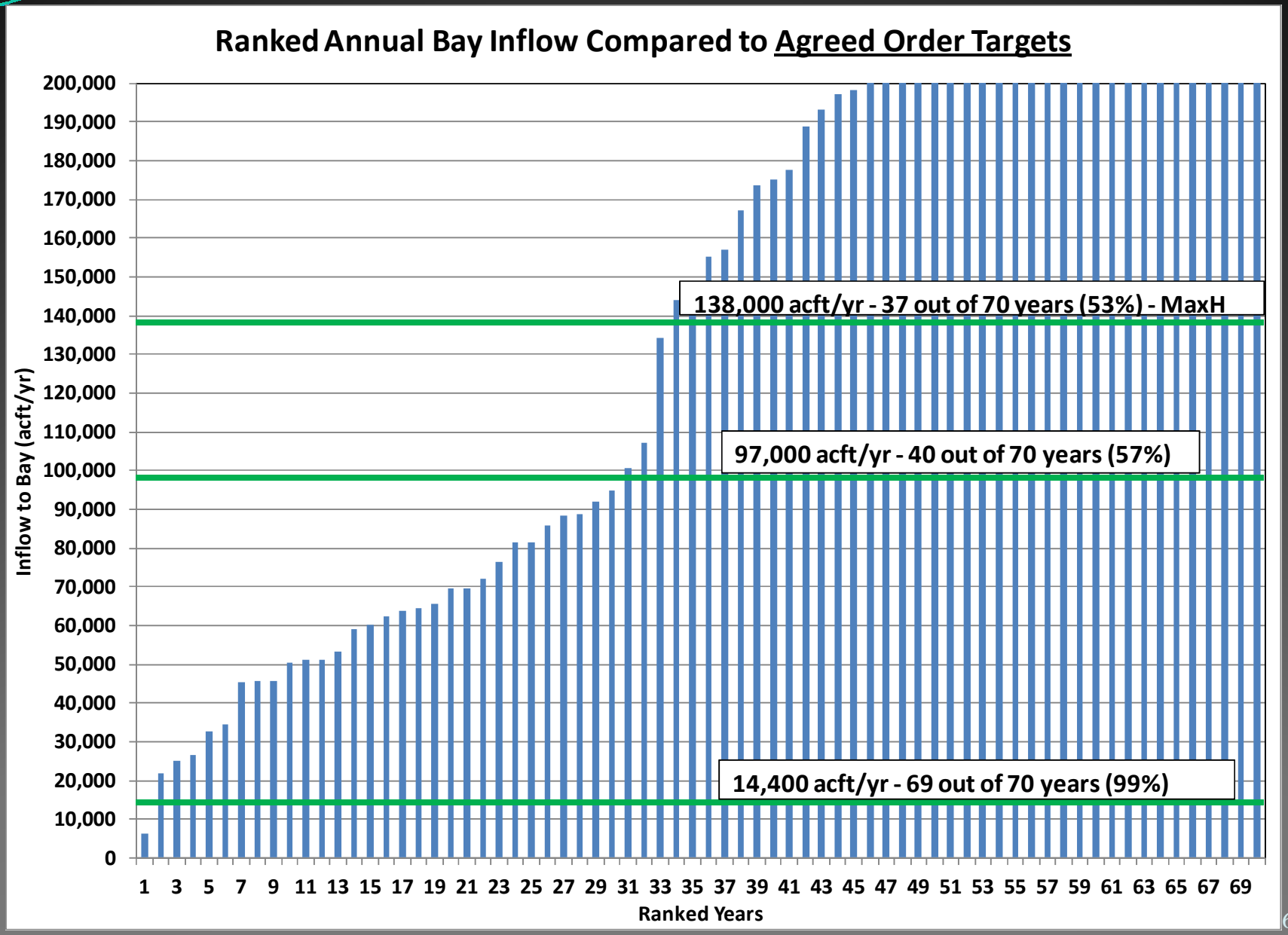
Condition (Target Salinity)	Nueces Bay Freshwater Inflow Regime (Attainment)			Recommendations	
	One overbanking event per year of 39,000 acft; maximum discharge of 3,600 cfs			Annual Total (acft)	Attainment
High (10)	125,000 acft (20%)	250,000 acft (25%)	375,000 (20%)	750,000	25%
Base (18)	22,000 acft (60%)	88,000 acft (60%)	56,000 (75%)	166,000	80%
Subsistence (34)	5,000 acft (95%)	10,000 acft (95%)	15,000 acft (95%)	30,000	95%
	Winter = Nov - Feb	Spring = Mar - Jun	Summer/Fall = Jul - Oct		

Existing Order - Attainment

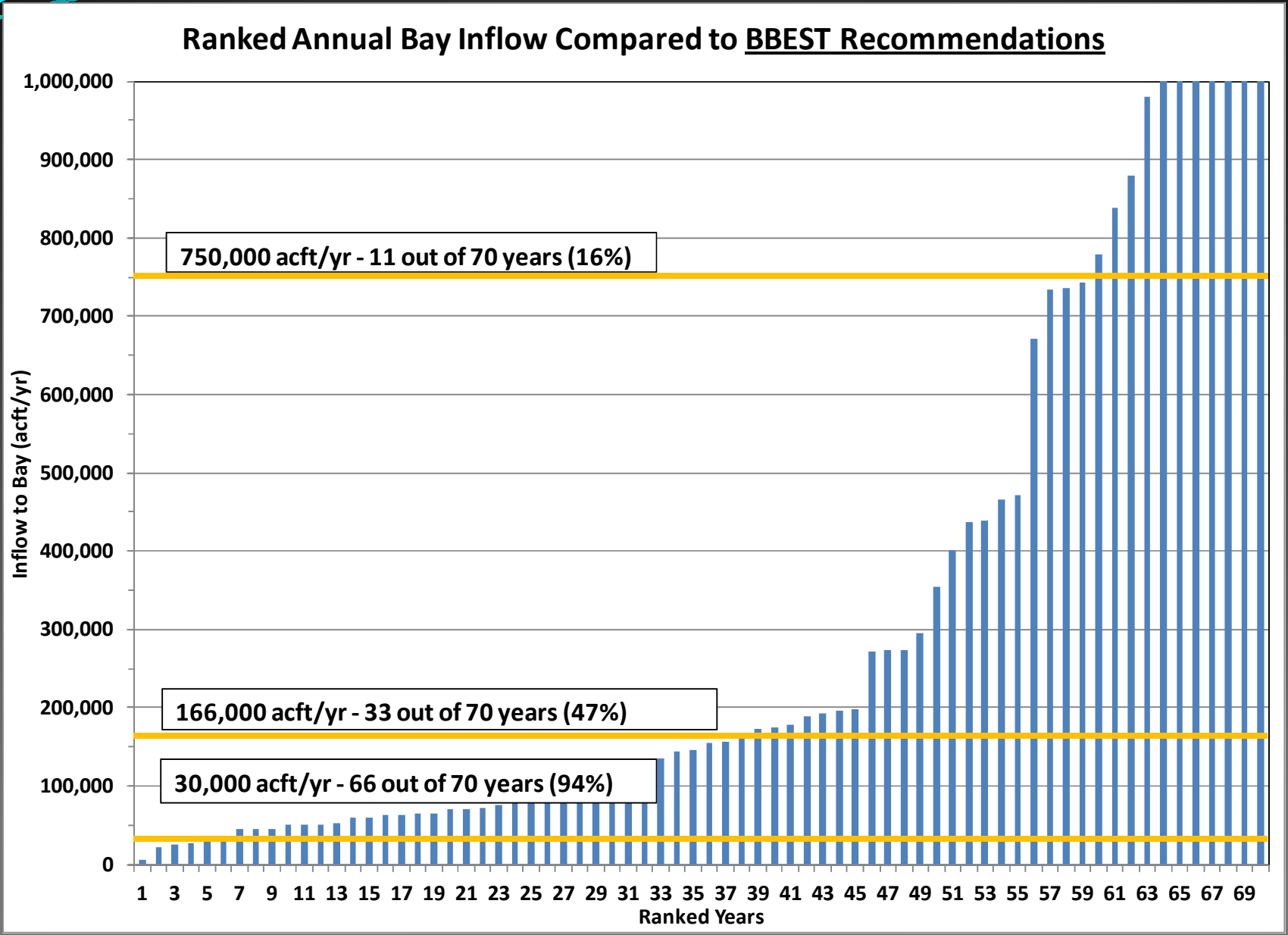
- Four Scenarios
  - 1 - Base - CCR/LCC/LT Safe Yield (75,000 acft min. stor.)
  - 2 - Base + Garwood (35,000 acft/yr)
  - 3 - Base + OCR (280,000 acft / 1,250 cfs)
  - 4 - Base + Garwood + OCR

	Safe Yields =	205,000	236,000	255,000	286,000
		Base	+ Garwood	+ O/C	+Garwood + O/C
Annual Volume	Target Attainment	Model Attainment			
750000	25%	16%	16%	11%	11%
166000	80%	47%	46%	39%	37%
30000	95%	94%	96%	90%	89%

Agreed Order – Nueces Bay Inflow



Agreed Order – Nueces Bay Inflow

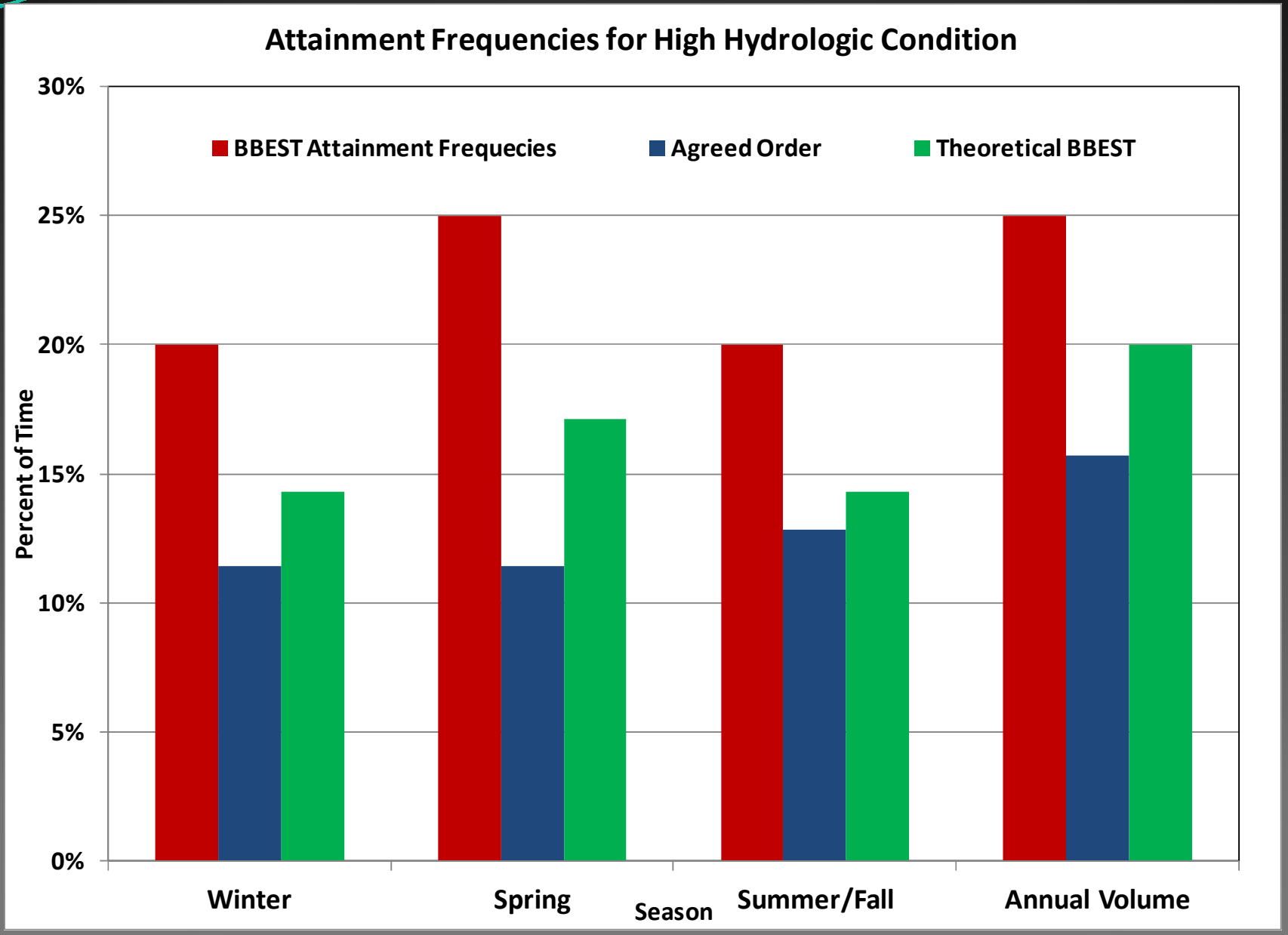


CCWSM – BBEST Recommendation

- Potential / Theoretical 82,000 acft/yr reduction in Safe Yield
- Subsistence Condition Annual attainment frequency above target
- Annual Base and High are below target
- Seasonally –Subsistence attainment frequency is above target for Spring and Summer / Fall

	Safe Yields =	205,000	236,000	255,000	286,000	123,000
		Base	+ Garwood	+ O/C	+Garwood + O/C	BBEST
Annual Volume	Target Attainment	Model Attainment				
750000	25%	16%	16%	11%	11%	20%
166000	80%	47%	46%	39%	37%	63%
30000	95%	94%	96%	90%	89%	99%

Attainment Frequencies



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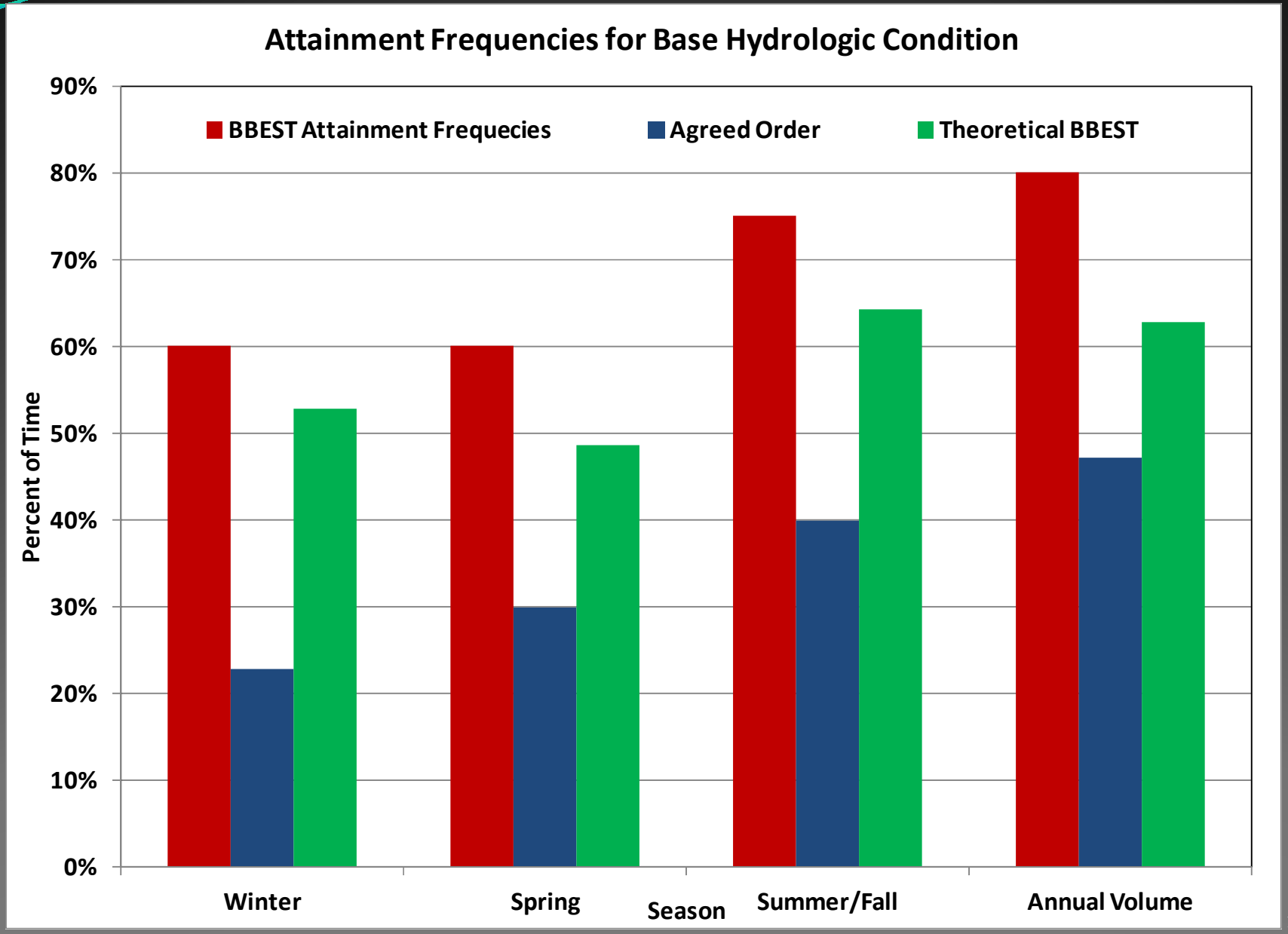

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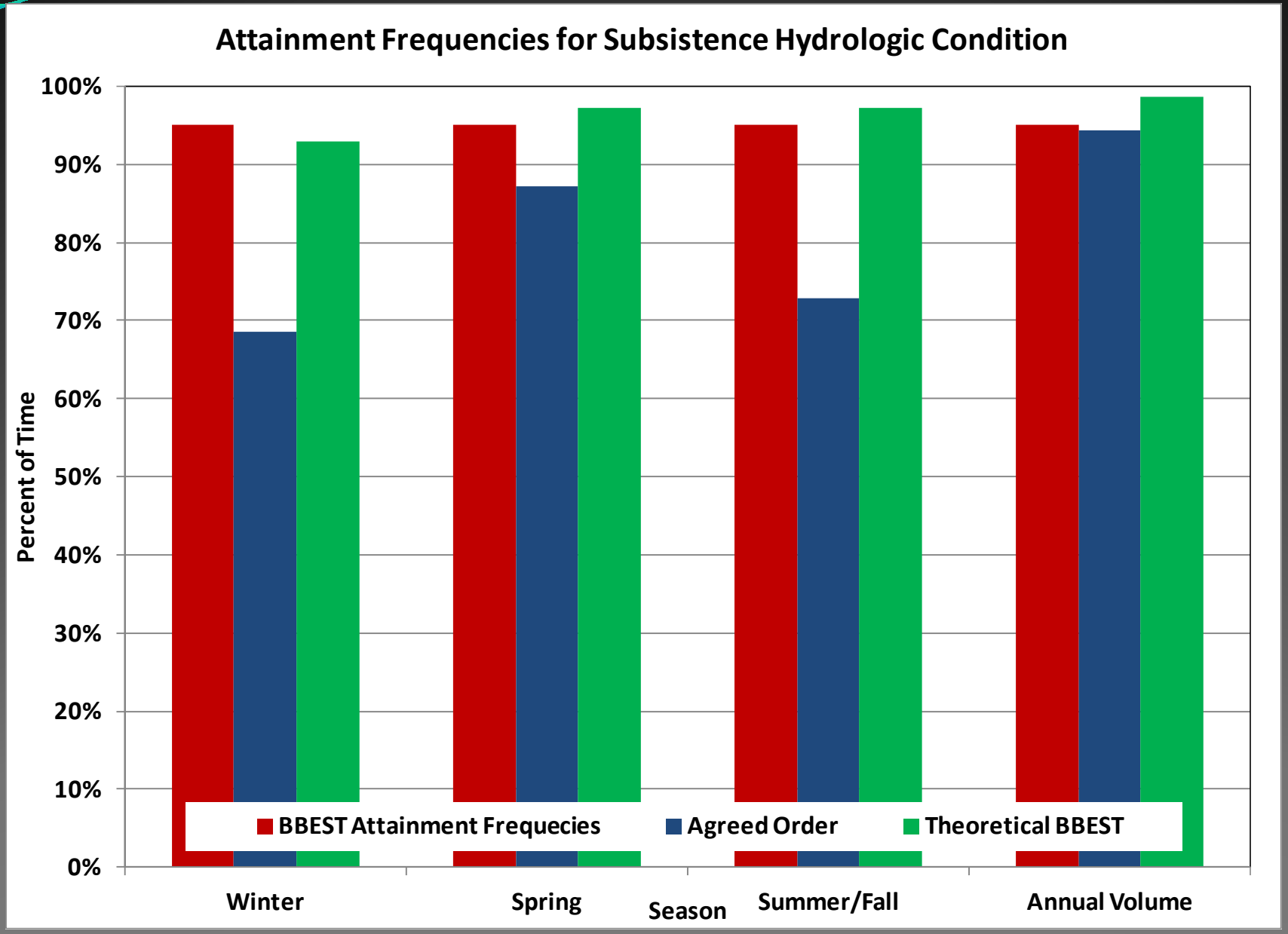
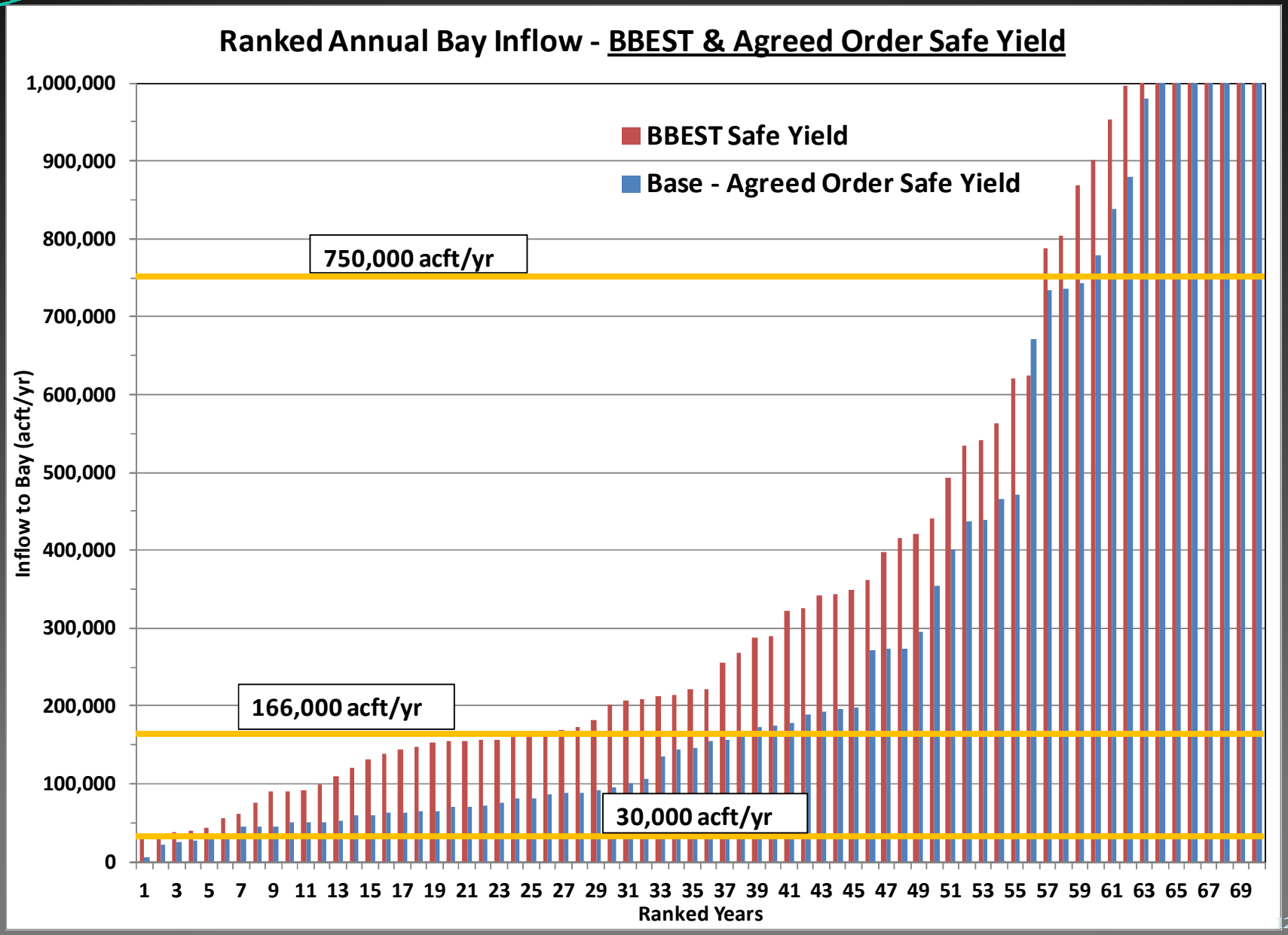


Nueces Bay Inflow



Path Forward / Questions?

- Finish up model development
  - Spill Banking
  - Operational Delivery
  - Projection Mode
- Evaluate additional scenarios with BBEST
  - Garwood
  - OCR
- Evaluate different Triggers Targets, and/or Attainment Frequencies for BBASC Recommendation