Another Capital Budgeting Question

Dija's Delicacies Inc. specializes in the mass production of healthy and tasty treats. Dija is presently considering whether or not to replace its current production process with a new production process. Dija Inc. bought its existing mass baking equipment 2 years ago for $100 million. At the time of purchase, $10 million salvage value was anticipated and the equipment was expected to be used for 12 years. The new baking equipment will cost $300 million and will have a useful life of 10 years, with a $20 million salvage value anticipated at the end of the equipment's useful life. Notably, the new production process will require an initial investment in net operating working capital of $30 million, although this is expected to be recovered at the end of the first year of operations under the new production method. As well, the replacement production method is expected to result in $50 million more in revenues each year (from the sale of tasty byproducts) and as well result in a decrease in operating costs of $10 million. Today, Dija Inc. can sell the old baking equipment for $80 million.

For depreciation purposes, Dija Inc. always applies the straight line, full depreciation method to all of its assets. Dija Inc.'s market value of equity is 60% of its total firm market value. The company is subject to a 40% corporate tax rate. Firms operating in the premium food industry generally have an equity beta of 1.1. The firm's debt is risk-free and has a beta of zero. The market risk premium is 6% and the risk free rate is 4%. Assume the capital asset pricing model holds.

Required:

I) What is Dija Inc.'s weighted average cost of capital?

II): Should Dija replace the existing production process?

The work required to answer parts I and II below is provided below.

Tax Rate	0.4											
Old Equipment												
Initial Cost	$100											
Depreciation	$ 8.333											
BV now	$ 83.333											
Net Proceeds from Salvage	$ 81.333											
Opportunity Cost of Forgone SV	$ 6											
New Equipment												
Initial Cost	300											
Depreciation	30											
Net Proceeds from Salvage	12											
YEARS 1 TO 10												
Revenues	50											
Costs	-10											
Differential Depreciation	$ 21.667											
EBIT	$ 38.33											
Taxes	$ 15.33											
Net Income	$ 23.00											
OCF	**$ 44.67**											
Year 0												
New Equipment	-300											
Net Proceeds Old Equipment	$81.33											
NOWC Investment	**-30**											
Net Cash Outflow	**-248.6667**											
Year 1												
NOWC Returned	**30**											
Year 10												
Proceeds from sale of New Equp	12											
Opportunity Cost of Old EqupSV	-6											
NET SV Effect	**6**											
Year	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
CFFA	**-248.6667**	**$ 74.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 44.67**	**$ 50.67**	
	-248.6667	**69.57386**	**38.78129**	**36.13612**	**33.67138**	**31.37475**	**29.23476**	**27.24074**	**25.38272**	**23.65144**	**24.9986**	91.37899
NPV	$91.38											
Beta Equity	1.1											
rf	0.04											
market risk premium	0.06											
rE	0.106											
rd	0.04											
Equity to Value	0.6											
WACC	0.0732											

Dija should replace the existing process as doing so is expected to add value to the firm (the expected added value is captured by the NPV).