

National Radio Astronomy Observatory  
Estimates for Construction and Establishment  
December 1957

Description	Appropriated FY 1957-58	AUI Recommen- dations, Dec. '57	Net Difference	Explanation of Difference
<b>A. Site Developments</b>				
1. Site Acquisition	550,000	650,000	100,000+	Decision to increase amount made by NSF:
2. On-site secondary roads	190,000	122,000	68,000-	Savings achieved through improved planning
3. Water supply and sewer	130,000	100,800	29,200-	Savings achieved through improved site planning
4. Electric power system	379,000	262,310	116,690-	Estimated decrease due to site discovery of
Sub-total	1,249,000	1,135,110	113,890-	temporary adequate power
<b>B. Building and Housing</b>				
1. Diesel-generator Bldg.	25,000	-0-	25,000-	Eliminated stand-by power generation from plans
2. Control Buildings	33,000	30,000	3,000-	Only one contro bldg. now planned for 85-foot
3. Maintenance Building	72,000	358,200	286,200+	Includes add'tl 11,376 sq.ft. for maintenance
4. Laboratory & Admin.	441,000	1,180,400	739,400+	Includes add'tl 29,750 sq.ft. for lab-offices
5. Housing (temporary)	25,000	83,000	58,000+	Number of bldgs for temp. labs & office increased
6. Residence Hall & Cafeteria	—	697,130	697,130+	23,314 sq.ft. for scientists & lab staff
Sub-total	596,000	2,348,730	1,752,730+	
<b>C. Radio Telescope Const. and Equipment</b>				
1. Excavation, clearing, foundation, etc. for 140-foot instrument	400,000	442,000	42,000+	Original estimate 2 yrs.old; inflation increase
2. Design, construction, erection of 140-foot instrument	1,800,000	4,308,000	2,508,000+	Increase due to improved design, higher specs., inflation, inadequacy of established engineering methods for estimating this type construction
3. Engineering, inspection, interior finish and auxiliary equip. for 140-foot	-0-	475,000	475,000+	Needed to supervise construction of 140-ft. telescope and put in operation
4. Rf components & electronic equipment	200,000	635,000	435,000+	Provides for add'tl receivers, equipment, etc.
5. Other observing equip.	275,000	310,000	35,000+	Due to construction of 85' instead of 60'
Sub-total	2,675,000	6,170,000	3,495,000+	

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Description	Appropriated FY 1957-58	AUI Recommen- dations 12/57	Net Difference	Explanation of Differences
<b>D. Other Observatory Equipment</b>				
1. Library	\$ 50,000.	\$ - 0 -	\$ 50,000.-	Library needs provided for under D.4 Addit. teles. & site maint.shop&repair equip Addit. lab & special shop space equipment. To equip partially scientific eng.&admin.off Furnish apartments&rooms forvisiting scien- tists and equip kitchen & cafeteria.
2. Shop and Repair Equipment	100,000.	180,000.	80,000.+	
3. Electronic Test & Repair Equip.	50,000.	125,000.	75,000.+	
4. Furniture & Office Equipment	50,000.	191,000.	141,000.+	
5. Residence Hall & Cafeteria Equip.-	0 -	92,000.	92,000.+	
Sub Total	\$250,000.	\$588,000.	\$338,000.+	
<b>E. Salaries, Operation, and Maintenance</b>	\$266,000.	\$310,000 <sup>2/</sup>	\$ 44,000.+	
<b>F. Contingency Reserve</b>				
1. Contingency - 140-foot	- 0 -	500,000.	500,000.+ <sup>1/</sup>	Escalation & contingency est. 10%const.costs Escalation & contingency est. 10%const.costs W.Va.State Taxes in connection with the construction of the 140-foot telescope.
2. Contingency - Other	94,000.	338,790.	244,790.+	
3. Taxes	- 0 -	200,000.	200,000.+ <sup>3/</sup>	
Sub Total	\$ 94,000.	\$1,038,790.	\$944,790.+	
<b>G. Other</b>				
Architect-Engineering Services	- 0 -	\$200,000.	\$200,000.+	Amount needed in connection with site development planning & construction.
<b>H. Sub Total - All Items</b>	\$5,130,000.	\$11,790,630.	\$6,660,630.+	
Less Operating Expenses	266,000.	310,000.	44,000.	
<b>Total - Capital Funds</b>	<b>\$4,864,000.</b>	<b>\$11,480,630.</b>	<b>\$6,616,630.+</b>	

- <sup>1/</sup> Provision for this type of cost was included in the initial estimate of \$2.2 M for the 140-foot telescope  
<sup>2/</sup> Operating Expenses up to June 30, 1958  
<sup>3/</sup> May not be needed - possibility of acquiring exemption is being investigated.