Government of India
Ministry of Culture

Guidelines for setting up of Science Cities

1. Concept

A Science City shall be conceptually similar to a Science Centre. However, it will be larger in dimension with a focus in frontier areas of Science and Technology and edutainment shall be financially self sustainable. It shall be conceptualized in such a manner that it is attractive and useful to students, families, tourist and general public. It will use state-of-the-art communication tools and technology in its presentation.

2. Main Objectives

i) To portray the growth of science and technology and their applications in industry and human welfare, with a view to develop scientific attitude and temper and to create, inculcate and sustain a general awareness amongst the people.

ii) To popularize science and technology in cities, urban and rural areas for the benefit of students and for the common man by organizing exhibitions, seminars, popular lectures, science camps and various other programs.

iii) To promote and enhance public understanding of the culture of science and technology.

iv) To supplement science education given in schools and colleges and to organize various out-of-school educational activities to foster a spirit of scientific enquiry and creativity among the students.

v) To design, develop and fabricate science museum exhibits, demonstration equipment and scientific teaching aids for science education and popularization of science.

vi) To organize training programmes for science teachers /students /young entrepreneurs/technicians/physically challenged/housewives and others on specific subjects of science, technology and industry.

3. Contents

The exhibits and activities of a Science City shall have the right mix of scientific values and novelty in presentation so as to be able to attract the common people from every

walk of life. Edutainment shall be the key concept in designing the exhibit and activities of the Science City. It will provide wide opportunities for visitors' participation in activities related to science and technology. The following major areas may be considered:-

A) *Face to face with science and technology*

- A science exposition hall to provide an exposure on cutting edge areas of science and technology and their impact on the society through interesting and enjoyable thematic presentation, experience based and immersive exhibits like large format films, 3D presentations, virtual reality experiences, simulators and many more hi-tech systems; the thematic presentation shall highlight Indian endeavour.

- The exhibits shall be multidisciplinary in theme and of hands-on minds-on in nature to the extent possible showcasing frontier areas of S & T. The topics change over a period of time with emergence of new areas in S&T. However, in the present context, subjects like Nano-technology, Space technology, Bio-technology, Robotics and Optical fibres, Computers, Earth Science, Human Body, Information technology, Bio-informatics, Heavy industries, Agriculture, Environment and recent understanding of scientific concepts etc. may be considered.

- A dedicated infrastructure shall be provided for corporate bodies, R & D institutions, scientific departments etc. to showcase current status of science and technology and R & D initiatives in respective areas of their activity.

- A 600–1000 seated auditorium for multipurpose use viz. science education programmes and science film shows, organising educational, cultural, industrial/ corporate programmes; (the capacity of the auditorium has been fixed keeping in view that one million visitors would visit the Science City).

  Other institutions shall be encouraged to organise their conferences, lectures, meetings, exhibitions and cultural events in the Science City on payment of rental charge to cover all expenses for regular running and operation of the auditorium including electricity charges, municipal taxes etc. Although the State Governments shall be approached to provide electricity at concessional rates and ensure municipal tax at non-commercial rate, all taxes and royalties for conducting such programmes shall be borne by the organisers.

B) *Experimentation and curriculum supplement*

- Interactive exhibits supplementing science education in schools and to explain basic principles of science and technology in an interesting and entertaining manner will be developed and set up here.

- Hands on activity based laboratories for the visitors and students with the intention to foster public awareness, engagement and understanding of cutting edge science and engineering like Biotechnology, Nanotechnology, Photonicsetc shall be set up. Such labs shall aim to link science centres and educational institutions with research institutions engaged in active cutting edge science and technology experimentation and research.

C) *Learning science outside the four walls*

- Science park aims to facilitate "**edutainment**", i.e., education through entertainment. It would be designed to make science relevant to everyday lives through a non-formal, "hands on, mind on" approach. Characterized by its two-pronged channel of communication – exhibits and activities, the exhibits will be mostly interactive and help children and the adults alike to learn the basics of science through fun and enjoyment in natural and non coercive situations. It would have something of interest to everyone regardless of social strata, education or age group and create a culture of learning. Science Park will provide a bridge to unite business, industry and community.

D) *Visitors' recreational facilities/amenities*

- This area will include water bodies, a nature trail, road train, fountains, food plaza, gift and souvenir shops, restaurants, rest rooms and such other facilities which shall not only satisfy the needs of the visitors but increase the holding time.

E) *Infrastructure*

- The Science City will have following main facilities for the public:

  - Science Exploration hall consisting of 5-7 large interactive science exhibitions
  - Space Odyssey consisting of digital dome theatre, 3D show, simulator and space science exhibitions
  - Demonstration areas to explain science through activities & experiments
  - Outdoor Science Park
  - Evolution Park
  - Auditorium
  - Workshop
  - Public utilities consisting of cafeteria, gift store, visitor interpretation area etc.
  - Car parking

4. Eligibility criteria and infrastructure

The location of the Science City should be either a State capital or a city of the State having a sizeable population of not less than 50 Lakhs. While deciding location for a Science City the primary concern shall be to ensure that it can draw at least 10 lakh visitors per year for self-sustainability.

i) The new Science Cities shall be set up preferably only in those places where no major Science Centre exists. *However, in locations where footfall to the science centre is substantial i.e., it qualifies for a science city, the science centre could be upgraded to a Regional Science City* or a separate Science City could be set up depending upon the importance of the place.

ii) The State Government will provide the following infrastructure facility free of cost:

(a) At least 25 acres of centrally located and easily accessible fully developed land without any encumbrances; (Although to do justice to exhibits, facilities especially those requiring open spaces and future expansion 30 acres would be preferable);

(b) Road connectivity,
(c) Telecommunication facilities,
(d) Power supply, water supply etc.
(e) Sewerage and storm water drainage system,
(f) Adequate public/private transport facilities.

(v) The State Governments and Societies / Authorities promoted by them for the purpose shall be eligible for financial assistance from the Central Government as per the norms.

vii) The State Government shall also make suitable provision for providing water, electricity, local taxes etc. at concessional rates as available to the educational institutions

NB: The above criteria may be relaxed and /or modified <u>in very special cases</u> by the Govt. of India for NE region.

5. Exhibition area

*A.**Floor area for indoor exhibitions***

(a) Science Exposition Hall	-	10000 sq.mt.
(b) Open laboratory and interactive exhibits hall	-	2500 sq.mt.
(c) Entrance Plaza and visitor's facilities	-	1500 sq.mt.
		Total: 14,000 sq.mt.

B. ***Outdoor expositions***

(a) Science Park **4,000 sq.mt.**

While developing the permanent infrastructure care must be taken to maintain a ratio of 25:75 for covered and open areas so that the visitors are not confined in a particular place and there is enough space to accommodate a large gathering on special days of the year.

Provision for future extension shall also be kept. A portion of the land area may be developed as commercial zone which may be rented out to other agencies to support in raising funds to meet the operation costs of the Science City to make it self-sustaining.

6. Time Schedule

Time required for implementation of Science City shall be about 54 months from the start of the construction work of the main building. In the first phase a portion of Science Exploration hall comprising of full dome movie projection unit, a motion simulator and a 3D theatre will be set up along with the entrance Plaza. This will help in revenue generation.

7. Budget (Average based on DPAR from 2011-2013)

Total estimated cost for implementation of a new Science City project is approx. ₹110.00 crore. However detailed estimate for an individual project needs to be prepared depending upon site condition, building design and local cost of construction.

Cost overrun or cost escalation of any Science Centre Project during the Plan period shall be determined by RBI Index and shall be borne by the State Govt from their own resources.

A suggestive break up of different items of expenditure is as follows:

Sl. No	Items	Cost in Crore ₹.
i.	***Expenditure on buildings and other works***	
	a. Cost of land **Notional. State Govt. shall provide it free of cost as part of its Share for the project.*	00.00
	b. Science City building 14,000 sq. mts. with indoor exhibition halls (@ Rs.26,004/- per sq. mt.)	36.41
	c. Stronger structural member to take heavy load 14000 x 1675.00	2.35
	d. Larger Module over 35 Sq.m. 14,000 x 1950	2.73
	e. Resisting earth make force 14,000 x 1241.00	1.74
	f. Internal Electrification @ external service connection 17.5%	7.57
	g. Car/bus parking areas/internal roads/landscaping/ water body/ boundary wall	2.72
	h. Air-conditioning/insulation/acoustics	03.27
	i. Transformer (2 MW)/UPS/D.G. set/Fire fighting	03.00
	j. Chairs/Carpet	01.00
	h. Planning, supervision and consultation fees 6%	03.12
	Sub total :	**63.91** (say 64**.00**)
ii.	***Expenditure on exhibits, equipment and stores***	
	a. Large format film projection unit with accessories	14.00
	b. Simulator and 3D Film Theatre	03.00
	c. Exhibits and artifacts	
	i) Thematic exhibits for Face to Face with S&T	08.00
	ii) Interactive exhibits for experimentation & curriculum supplement	02.00
	d. Projection equipment, audio-visuals, electrical installations etc.	
	i) For Auditorium	01.00
	ii. For Digital Panorama	12.00
	e. Misc. equipment	
	i) Workshop tools and machineries	01.00
	f. Development of Science Park exhibits including cost of exhibits	01.50
	h. Salary of Project staff	02.50
	i. TA/DA for project staff	0.40
	j. Other Adm. Expenses	0.40
	k. Advt. & Publicity	0.20
	Sub total :	**46.00**
	Total :	**109.91**
		(Say110.00)
iii	***Foreign Exchange component included in Item (ii) above***	
	a. Large format film projection unit with accessories	14.00
	b. Space Capsule (Simulator) & 3D Theatre	03.00
	c. Projection equipment for Digital Panorama	08.00
	c**.** Misc. other equipments	01.00

	Sub total :	**26.00**
iv.	***No foreign exchange is involved in bringing foreign experts or for buying foreign expertise.***	

(The above estimate is for budgetary purpose only. Detailed cost estimates for individual projects are to be worked out based on the master plan prepared for the project.)

	Cost Index of Delhi as on 1/4/2011	49%
	Cost Index of Delhi as on 1/4/2012	61%
	Cost Index of Delhi as on 1/4/2015 will be on prorate basis	97%
	Piling cost will be extra if bearing capacity of soil is poor. (14000 x 12746.00) = 17.84 crore Say 18.00 crore.	

8. (A) Funding Pattern

(i) The financial participation of the Central Government for new Science Cities will be limited to ₹6600.00 lakhs only (60% out of a total of ₹ 11000.00 lakhs).

(ii) The State Government shall arrange for the balance fund of ₹44.00 Crore (40% out of a total of ₹110.00crore)plus a 25 acre of land made available free of cost for the purpose of setting up the Science City. State contribution of ₹44.00 crore may be raised either by themselves or by a private/ corporate agencies or a combination of both.

(iii) At the beginning of each year, the State Government shall provide their share for the year (part of ₹44.00 crore) up front and the Central Government shall also release proportionate amount out of their share at one go (on a pro-rata basis for 60:40 sharing of ₹110.00 crore).

Year wise phasing of capital expenditure (Rs. in lakhs)

Source	**1st Year**	**2nd Year**	**3rd Year**	**4th Year**	**5th Year**	**Total**
Govt. of India	600	2000	2000	2000	0	6600
State Govt.	500	1300	1300	1300	0	4400
Total	**1100**	**3300**	**3300**	**3300**	**0**	**11000**

(iv) However for NE region and island territories the sharing of the capital cost shall be at 90:10 respectively between the Govt. of India and the respective State Governments.

Year wise phasing of capital expenditure for NE (Rs. in lakhs)

Source	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
Govt. of India	1000	4000	4000	900	0	9900
State Govt.	200	400	400	100	0	1100
Total	**1200**	**4400**	**4400**	**1000**	**0**	**11100**

9. Management and operation

i. The new Science Cities shall be made independent autonomous bodies run and managed by societies formed by the respective State Governments. NCSM may be paid normal consultancy fees for technical guidance and consultancy in exhibit development and manpower training. These Societies are to be formed before start of execution of the projects so that they are able to receive monetary grants from both Central and State Govts. and the private/ corporate/industry sources as well as raise loans from financial institutions. Gap funding for management & operation shall be provided by the separate State/UT Govts.

ii. All Science Cities shall be maintained at the best possible way by generating enough funds by themselves to sustain all the operations. However capital grant for future developments may be raised from different sources. Corporate investments may be considered in two forms - either capital grant or Private Public Partnership if it is not forthcoming then through revenue support over the years against use of facilities and infrastructure.

10. Pre-requisites for approval of Ministry

Feasibility Report: Detailed studies are to be conducted to ascertain the feasibility of any Science City project. The study shall carefully determine whether the proposed Science City shall have the ability to draw 10 lakh visitors annually and thereby have the prospect of being financially self supportive. The study shall be conducted by engaging professional consultancy service providers with active involvement of NCSM. Appropriate consultancy fees are to be paid to NCSM.

The Science City should have the provision for modular expansion at a later date, should the need arise.

11. Project implementation

The new Science City project shall be implemented by the concerned Societies formed by the respective State Governments. In case consultancy is sought from NCSM, the same will be limited to technical guidance and consultancy for design, development and installation of exhibits and also help in procurement and commissioning of equipment. Manpower training will also be a part of consultancy from NCSM.

12. Monitoring

Monitoring of Science Cities set up as individual Autonomous Societies shall be done by high level committees set up by the respective State Governments with due representation from the Government of India, the concerned State Government, their private/corporate partners (if any), NCSM and at least five eminent personalities in the fields of education, culture, S&T, industry and museology.

13. Staff Requirement for Science City

Sl. No.	Designation and Scale of Pay on the basis of 6th Pay Commission	Grade Pay & Pay Band	No. of Posts	Total Yearly Remuneration (Rs. In Lakhs)
1.	Director (Rs.37,400-67,000)	8700, PB-4	1	12.00
2.	Curator (Rs. 15600 – 39100)	5400, PB-3	5	27.75
3.	Executive Engineer (Rs. 15600 – 39100)	6600, PB-3	1	7.00
4.	Education Assistant (Rs. 5200 – 20200)	2800, PB-1	4	12.00
5.	Technical Assistant (Rs. 5200 – 20200)	2800, PB-1	4	12.00
6.	Technician (Rs. 5200 – 20200)	1900, PB-1	8	15.50
7.	Administrative Officer, (Rs. 15600 – 39100)	6600 PB-3	1	7.00
8.	Finance & Accounts Officer (Rs. 15600 – 39100)	5400 PB-3	1	7.00
9.	Assistant (Gen) (Rs. 9300 – 34800)	4200, PB-2	8	30.00
10.	SPA (Rs. 9300 – 34800)	4600, PB-2	1	3.50

11.	Upper Division Clerk (Rs. 5200 – 20200)	2400, PB-1	1	3.00
12.	Lower Division Clerk (Rs. 5200 – 20200)	1900, PB-1	8	16.00
13.	Driver (Rs. 5200 – 20200)	1900, PB-1	1	3.00
Total			**44***	**155.75 ~ 156.00**

*Security, housekeeping, gardening work shall be outsourced; hence staff recruitment for this category has not been projected.

EXPECTED ANNUAL EXPENDITURE AFTER INAUGURATION(Rs. in Lakhs)

Item of expenditure		1st year	2nd year	3rd year
1.	Salary of regular staff	156.00	172.00	190.00
2.	Security/Conservancy contract	30.00	35.00	40.00
3.	Electricity (at concessional rate)	120.00	140.00	180.00
4.	Exhibit maintenance	25.00	40.00	50.00
5.	Equipment maintenance	15.00	15.00	20.00
6.	Building maintenance	10.00	10.00	15.00
7.	Paid publicity	10.00	15.00	20.00
8.	Space Odyssey film lease etc.	50.00	50.00	50.00
9.	Misc. office expenses	10.00	12.00	15.00
10.	Contingencies	10.00	12.00	15.00
11.	New Developments & Activities	15.00	30.00	90.00
12.	TA/DA	20.00	25.00	30.00

13.	Medical	5.00	6.00	10.00
14.	Books, Films etc	00. 50	00.75	1.00
	Total:	**476.50**	**562.75**	**726***

* The Recurring expenditure of the Science City and the gap funding will be borne by the respective State Govt./UT's after its inauguration.

Revised Norms for setting up of Science Centres

1. Preamble

A task force constituted by the Planning Commission in the early 1970's assessed the activities of the Science Museums and gave several recommendations on the course of action to be taken for the growth, sustenance and effective utilisation of these institutions. It brought to light the immense potentiality of the science museums for creating science awareness and scientific temper among the people.

The most important recommendations were to develop science museums/centres in 3 levels – National, Regional and District and to set up science museums/ centres in different parts of the country particularly to serve the rural populace.

Based on this the National Council of Science Museums initiated process to set up national level science museums/centres, Regional Science Centres and District Science Centres located in metropolis, state capitals and district headquarters respectively.

During early 90's while NCSM was setting up science centres in the north-eastern region, it was felt that although the north-eastern states were small in dimension, they had a distinct identity as a State. Therefore, naming the science centres in the northeast, as District Science Centres appeared to be out of place. Consequently these centres were designated as Sub-Regional Science Centres.

Currently there are several nomenclatures existing that categorise the science museums/centres. Such diverse nomenclature may confuse the State Governments or other agencies that are interested in setting up science centres. Therefore, it is proposed that in place of having diverse nomenclatures for the science centres, a single title namely " SCIENCE CENTRE" may be considered and the norms for setting up of the science centres may be derived based on the population of the place where the science centre is proposed to be set up.

Ministry of Culture lays down the following revised norms for Science Centre Projects and their funding:

2. Objectives

The Science Centre will have primarily the following objectives:

- To portray the growth of science and technology and their application in industry and human welfare, with a view to develop scientific attitude and temper and to create, inculcate and sustain a general awareness amongst the people.

- To popularise science and technology for the benefit of students and for the common man of the region by organising exhibitions, seminars, popular lectures, science camps and various other programmes.

- To supplement science education given in schools and colleges and to organise various out-of-school educational activities to foster a spirit of scientific inquiry and creativity among the students.

- To design, develop and fabricate science museum exhibits, demonstration equipment and scientific teaching aids for science education and popularisation of science.

- To organise training programmes for science teachers / students/young entrepreneurs/ technicians/physically challenged/housewives and others on specific subjects of science, technology and industry.

3. Concept

A science centre provides an experiment based learning ambience to inculcate a spirit of inquiry, foster creative talent and create scientific temper in the community as a whole. It is characterised by its two-pronged channel of communication - exhibits and activities. While the exhibits, both indoor and outdoor, are mostly interactive, the demonstrations and training programmes are also fully participatory and help children and the adults alike to learn the basics of science through fun and enjoyment.

Science is best understood through experience and experimentation. Science Education, therefore, should essentially involve hands-on, experimentation based learning and should not remain within the domain of textbook reading. This is more important in India in view of widespread science illiteracy in the country. A Science Centre on the other hand provides scope of 'doing science' adopting a hands-on approach which offers to the visitor a number of experimental options through which they can discover the scientific concept themselves. Such mode of education has so far proved to be very effective in supplementing formal science education in our country.

4. Physical and Financial Requirements

Category I (Regional Science Centre)

(A): Science Centre located in a city / town with a population of 15 lakhs or more

(i) **Land**: Minimum 7 acres developed land (preferably without any low-lying area and of fairly regular shape) to be provided by the State Government, free of cost.

(ii) **Capital Expenditure**:

*The capital fund needed for setting up science centres of Category I is Rs. 14.50 crore. **

(iii) ***Detailed break-up of the cost***

Sl. No.	**Item of work/expenditure**		**Amount (in Rs. Lakhs)**
01.	RSC main building with a covered area of approx. 4000 sq.mtrs., Civil construction including plumbing and sanitary	855.36	1028.36
	Electrical work & air-conditioning	106.92	
	Lift and fire fighting	25.00	
	Chairs for auditorium	5.00	
	Architect fee	36.08	
02.	Three thematic galleries of app. 600 sq. mtrs with 50 exhibits each		220.00
03.	Science Park of approx. 4 acres area with pathway and required exhibits (50 nos.)		70.00
04.	Inflatable dome planetarium system (Taramandal)		5.00
05.	Fully functional exhibit development lab		9.00
06.	Other facilities like Computer training area, Library, Conference Room, Stores, and Office etc. with all required infrastructures.		35.00
07.	Training of the recruited staff members and other miscellaneous expenses		5.00
08.	3 D theatre facility with equipment, furniture etc.		30.00
09.	Misc. (Building/Auditorium furnishing, signage, murals etc.		8.00
10.	Salary & TA/DA of Project Staff		40.00
	Grand Total		**1450.36 ~ 1450.00**

(iv) ***Fund Requirement:***

Science Centre (Scheme 'A') *– The estimated cost of this Category of Science Centre shall be Rs.14.50 crore. It can be set up in locations /regions where the Science Centre activities have not yet started or in priority areas. Ministry of Culture, Government of India may consider providing full funding for such Centres through NCSM.*

Science Centre(Scheme 'B') *– The capital cost of the Science Centre project (Category I) will be Rs. 14.50 crore which will be shared on 50:50 basis between the State Government and the Govt. of India.*

Science Centre(Scheme 'C') *– The Capital cost of the Science Centre will be Rs.14.50 crore. The State Govt./U.T. shall fully fund this science centre project and set up the Science Centre with technical support from NCSM within this budget.*

(v) ***YEAR WISE PHASING OF CAPITAL EXPENDITURE***

(Rs. In Crore)

Source	***1st Year***	***2nd Year***	***3rd Year***	***Total***
Govt. of India	***2.50***	***3.25***	***1.50***	***7.25***
	4.00**	***6.50*****	***4.50*****	***14.50*****
State Govt.	***7.25 to be released upfront prior to starting of the project***			

*** **In case of Govt. of India fully funded project.***

Cost overrun or cost escalation of any Science Centre Project during the Plan period shall be determined by RBI Index and shall be borne by the State Govt from their own resources.

(vi) ***Recurring Expenditure:***

The recurring expenditure will be completely borne by the State Government except in cases where Govt. of India decides to fully fund the project and manage it through its professional agency like NCSM. At present, the average annual recurring expenditure for a science centre is between Rs. 60.00 to Rs. 75.00 lakhs. Every year provision for the annual recurring expenditure for maintenance of the centre and organising year round activities shall be made by the State Government.

(vii) ***Operation:***

The Science Centres may be operated in any one of the following operational mode:

Scheme – 'A'

The Science Centre will be set up with full funding from the Govt. of India and operated & maintained by the Ministry of Culture through NCSM. Such science centres shall be set up in priority areas or States where science centre activity has still not been initiated. In no case, more than one Science Centre will be set up in any State/U.T. in future, under the scheme. In places where NCSM centres are already existing, such provision shall not be applicable. However, Centres set up by NCSM but handed over to respective states or U.T.s, if required, could be looked after by NCSM with funds from States/U.T.s or Central Govt. as the case may be to meet their objectives and for better co-ordination of science popularization activities.

Scheme – 'B'

State Governments /U.T. administration desirous of having more than one science centre or wanting accelerated development of Science Centres shall be given priority provided they agree to fund the project(s) on 50:50 cost sharing basis with free land as well as agree to bear the entire operating cost of the centre after it is developed and handed over to the States/U.T.'s.

Scheme – 'C'

Under this scheme, State Governments agreeing to fully fund the science centre project and provide land and other required facilities for the science centre shall be accorded priority. NCSM shall provide technical support including exhibits at cost to the State Govt. in setting up of the Science Centre.

In case of projects handed over to the States, such Science Centre will be operated and maintained by a Registered Society formed by the State Government.

However, under both 'B' & 'C' schemes the Society should be formed immediately after the release of the fund by the State Government towards its share of the capital cost of the project. A representative of the National Council of Science Museums shall be an ex-officio member of the Society or the Governing Council to maintain an organic link with NCSM. The Society shall ensure that the Science Centre functions as per the requirement of its objectives without any deviations.

(viii) Implementation Strategy:

- ***Construction***

*Science Centre being set up under **Scheme 'A'** – NCSM shall construct the Science Centre building, design, develop, fabricate and install both indoor and outdoor exhibits. The centre will be operated under the administrative control of NCSM.*

*Science Centre being set up under **Scheme 'B'** – NCSM will complete the Science Centre on a turn-key basis (including construction and commissioning of the Science Centre) and handover the project after completion to the State Government/U.T. NCSM shall start the construction work only after the share or funding is received from the State Govt.*

*Science Centre being set up under **Scheme 'C'** – The State Government/U.T. shall do the construction of the building of the Science Centre as per inputs from NCSM, develop the Science Park etc. as per advice of NCSM. NCSM shall provide technical support for the project.*

- ***Recruitment of Staff***

*Science Centre under **Scheme 'A'**– NCSM shall recruit and train required manpower for operating the science centre. The required core staff strength for the science centre shall be sanctioned by the Ministry and requisite fund shall be allocated annually to NCSM.*

*Science Centre under **Scheme 'B'**– Such Science Centre will be operated and maintained by a Registered Society formed by the State Government. The Registered Society so formed by the State Government will complete the recruitment of the required core staff members within 3 months of the release of funds. NCSM shall give technical support to the State Govt. for recruitment of staff to ensure candidates with right aptitude are selected. If no recruitment is made within 3 months, NCSM shall recruit the core staff in consultation with respective State Govt./local body coordinating the project. On handing over the project the State/U.T. Govt. will take the liability of the recruited staff by NCSM ensuring payment of the same salaries drawn by the incumbents at the time of handing over of the project.*

*Science Centre under **Scheme 'C'**- Such Science Centre will be operated and maintained by a Registered Society formed by the State Government. The Society should be formed immediately on commencement of the project. The Registered Society so formed by the State Government will complete the recruitment of the required core staff members within 3 months after start of the construction work. NCSM shall give technical support for recruitment of staff to the State Govt. to ensure candidates with right aptitude are selected.*

- ***Training***

*Science Centre set up under **Scheme 'A'** – NCSM shall recruit required core staff for running such science centres and provide them adequate training for operation and maintenance of the science centre.*

*Science Centre set up under **Scheme 'B' & 'C'** – The Officers and staff recruited by the Registered Society or by the State Govt. will be trained by NCSM in any of its* unit. *The State Govt. shall depute them for necessary training on development, operation and maintenance of Science Centre at least one year prior to completing the project. The cost of such training shall be borne by the State/U.T.*

(ix) Schedule of Recruitment

Sl. No.	**To be recruited and posted within 3 months from the release of the fund by the State Govt.**		**To be recruited and posted within one year from the release of the fund by the State Govt.**	
01	Curator	02	Assistant (General)	01
02	Education Assistant	02	Upper Division Clerk	01
03	Technical Assistant	01	Junior Steno	01
04	Technicians	08	Lower Division Clerk	02
	Total	*13*	*Total*	05
	Grand Total - 18			

(x) Time Schedule:

For a Science Centre, required time for setting up the centre is 33 months.

(xi) Content:

The building will have a covered area of 4000 Sq. Mtrs. (approx.) of which 1800 Sq. Mtrs will be used as exhibit display halls, 1200 Sq. Mtrs. As visitors' activity area and remaining 1000 Sq. Mtrs as exhibit development laboratory, office etc. Scope will be provided for future extension of floor area.

Generally the following galleries and facilities will be set up in a Science Centre:

Permanent Galleries:

- Thematic Galleries: The Centre will have two thematic galleries. The galleries of the centre will be multidisciplinary in nature on themes of scientific importance as well as social relevance. The exhibits will be mostly interactive. These will be supplemented with visuals, illustrations and artefacts. The galleries will reflect all aspects of the chosen themes in a way easily comprehensible by students as well as common people.
- Fun Science: A group of interactive exhibits on Physical Science, Mathematics, Geography, Geology, Electronics, Life Science, Chemistry, Computer Science and Information Technology will form this gallery. The exhibits will be providing curriculum support to the students as well as make science learning a fun to the visitors

Temporary Exhibition Hall:

In this hall various temporary exhibitions on important themes will be organised periodically and on different occasions.

Outdoor Science Park:
Science brought outside the boundary of four walls. Interactive exhibits placed aesthetically in the lush greenery of the park. Children play with them while learns the fundamentals of science. Water body, Aviary, Animalorium, Herbal and Medicinal plant corner, Picnic area for visitors etc are added attractions.

Taramandal:
The inflatable dome planetarium can provide an excellent way of interactive learning of astronomy. The programme will be held regularly at the centre.

Exhibit Development Lab:
This will be used for regular maintenance of exhibits and development of exhibits and kits in future. The Lab will be equipped with tools and machinery for fitting, carpentry, sheet metal, welding, electrical, electronics and painting works.

Mobile Science Exhibition (Optional):

The Mobile Science Exhibition (MSE) bus of the Centre will travel to schools situated in remote areas and will conduct exhibitions on relevant science and environmental topics throughout the year.

Other facilities:
Computer Training Room, Science Library, Conference Room, Office, Store etc.

Educational and Training Programmes:
The centre will hold regular educational programmes like Science Demonstration Lecture, Popular lecture, Creative Ability Programme, Sky observation through telescopes, Computer awareness programmes, Science Quiz, Science Seminars and Science Fairs, Teachers' Training Programme, Community Awareness Programme, Anti-superstition Programme, Science Film Show etc. for students, teachers and common people. A training hall and a 150-seater auditorium will be used for these purposes.
There will be a Model School Science Centre where students will learn the basic principles of science through experimentation in science and fabrication of science models, which can be used as teaching aids. This will supplement the formal science education imparted in the schools. There will also be a children's activity corner.

(xii) Project Time line:

Programme Schedule		From the date of placing of order
a	Construction of Building	24 months
b	Development of Science Park	12 months
c	Fabrication of exhibits.	30 months
d	Installation of exhibits	03 months (after completion of other facilities)
e	Opening of the centre	33 months (approx.)

Clearance from the Government:

For setting up the Science Centre by NCSM approval is required from Government of India. All other statutory clearances and approvals required by the local authorities of the State Government/other bodies etc. shall be obtained by the State Government.

Category II (Sub Regional Science Centre)

(B) **Science Centre located in a city/ town with a population between 5 and 15 lakhs and for those located in hilly terrains and island territories**

(i) **Land**:

Minimum 5.0 acres (preferably without any low-lying area and of fairly regular shape) of developed land shall be provided by the State Government free of cost. For hilly areas, island territories etc. 2.5 acres will be acceptable provided the land is having good vicinity.

(ii) **Capital Expenditure**:

The Capital fund needed for setting up Science Centre of Category II is Rs.5.00 crore. However, for hilly terrains, island territories and remote areas with difficult access, the capital cost of science centre will be Rs. 6.00 crore. The number of such centres may be restricted to one per State/UT. The required land for the science centre shall be made available free of cost by the State Govt. or the local body.

(iii) ***Detailed break-up of the cost***

Sl. No.	***Item of work/expenditure***		***Amount (in Rs. Lakhs)***
01.	*SRSC main building with a covered area of approx. 1500 sq.mtrs., Civil construction including plumbing and sanitary*	*320.76*	
	Electrical work & air-conditioning	*40.09*	
	Chairs for auditorium	*2.00*	
	Architect fee	*13.53*	*376.38*
02.	*Two thematic galleries of 250 Sq.m. (25 exhibits)*		*70.00*
03.	*Science Park of approx. 3 acres area with pathway and required exhibits*		*20.00*
04.	*Inflatable dome planetarium (Taramandal)*		*5.00*
05.	*Fully functional exhibit development lab*		*5.00*
06.	*Other facilities like Computer training area, Library, Conference Room, Stores, and Office etc. with all required infrastructures.*		*10.00*
07.	*Salary & TA/DA of Project Staff*		*15.00*
	Grand Total		***501.38***
	Say		***500.00 lakhs***
	For N.E. and other hilly area		***600.00 lakhs***

(iv) ***Fund Requirement:***

*Science Centre (**Scheme 'A')** – The estimated cost of this Category of Science Centre will be Rs.5.00 crore. It can be set up in locations /regions where the Science Centre activities have not yet started or in priority area. However, for hilly terrains, island territories and remote areas with*

difficult access, the capital cost of science centre will be Rs.6.00 crore. Ministry of Culture, Government of India may consider providing full funding for such Centres through NCSM.

*Science Centre (**Scheme 'B')** - The capital cost of the Science Centre project (Category II) will be Rs. 5.00/6.00 crore which will be normally shared on 50:50 basis between the State Government and the Govt. of India.*

*Science Centre **(Scheme 'C')** – The Capital cost of the Science Centre project will be Rs.5.00/6.00 crore. The State Govt./U.T. shall fully fund this science centre project and set up the science centre with technical support from NCSM within this budget.*

(v) YEAR WISE PHASING OF CAPITAL EXPENDITURE

(Rs. in Crore)

Source	***1st Year***	***2nd Year***	***3rd Year***	***Total***
Govt. of India	***0.50***	***1.25***	***0.75***	***2.50***
	1.00*	***2.50****	***1.50****	***5.00****
State Govt.	***2.50 to be released upfront prior to starting of the project***			

** **In case of Govt. of India fully funded project.**

Cost overrun or cost escalation of any Science Centre Project during the Plan period shall be determined by RBI Index and shall be borne by the State Govt from their own resources.

(vi) Recurring Expenditure:

The recurring expenditure will be completely borne by the State Government *except in cases where Govt. of India decides to fully fund the project and manage it through its professional agency like NCSM.At present, the average annual recurring expenditure for a science centre is between Rs.30.00 to Rs.40.00 lakhs.Every year provision for the annual recurring*

expenditure for maintenance of the centre and organising year round activities shall be made by the State Government.

(vii) Operation:

The Science Centres may be operated in any one of the following operational mode:

Scheme – 'A'

The Science Centre will be set up with full funding from the Govt. of India and operated & maintained by the Ministry of Culture through NCSM. Such science centres shall be set up in priority areas or States where science centre activity has still not been initiated. In no case, more than one Science Centre will be set up in any State/U.T., in future, under this scheme. In places where NCSM centres are already existing, such provision shall not be applicable. However, Centres set up by NCSM but handed over to respective states or U.T.s, if required, could be looked after by NCSM with funds from States/U.T.s or Central Govt. as the case may be to meet their objectives and for better co-ordination of science popularization activities.

Scheme – 'B'

State Governments /UT administration desirous of having more than one science centre or wanting accelerated development of Science Centres shall be given priority provided they agree to fund the project(s) on 50:50 cost sharing basis with free land as well as agree to bear the entire operating cost of the centre after it is developed and handed over to the States/U.T.'s.

Scheme – 'C'

Under this scheme, State Governments agreeing to fully fund the science centre project and provide land and other required facilities for the science centre shall be accorded priority. NCSM shall provide technical support including exhibits at cost to the State Govt. in setting up of the Science Centre.

In case of projects handed over to the States, such Science Centre will be operated and maintained by a Registered Society formed by the State Government.

However, under both 'B' & 'C' schemes the Society should be formed immediately after the release of the fund by the State Government towards its share of the capital cost of the project. A representative of the National Council of Science Museums shall be an ex-officio member of the Society or the Governing Council to maintain an organic link with NCSM. The Society shall ensure that the Science Centre functions as per the requirement of its objectives without any deviations.

Implementation Strategy:

- ***Construction***

  *Science Centre being set up under **Scheme 'A'** - NCSM shall construct the Science Centre building, design, develop, fabricate and install both indoor and outdoor exhibits. The centre will be operated under the administrative control of NCSM.*
  *Science Centre being set up under **Scheme 'B'** – NCSM will complete the Science Centre on a turn-key basis (including construction and commissioning of the Science Centre) and handover the project after ompletion to the State Government/U.T.*
  NCSM shall start the construction work only after the share or funding is received from the State Govt.
  *Science Centre being set up under **Scheme 'C'** – The State Government/U.T. shall do the construction of the building of the Science Centre as per inputs from NCSM; develop the Science Park etc. as per the advice of NCSM. NCSM shall provide technical support for the project.*

- ***Recruitment of Staff***

  *Science Centre under **Scheme 'A'**– NCSM shall recruit and train required manpower for operating the science centre. The required core staff strength for the science centre shall be sanctioned by the Ministry and requisite fund shall be allocated annually to NCSM.*
  *Science Centre under **Scheme 'B'**– Such Science Centre will be operated and maintained by a Registered Society formed by the State Government. The Registered Society so formed by the State Government will complete the recruitment of the required core staff members within 3 months of the release of funds. NCSM shall give technical support to the State Govt. for recruitment of staff to ensure candidates with right aptitude are selected. If no recruitment is made within 3 months, NCSM shall recruit the core staff in consultation with respective State Govt./local body coordinating the project. On handing over the project the State/U.T. Govt. will take the liability of the recruited staff by NCSM ensuring payment of the same salaries drawn by the incumbents at the time of handing over of the project.*
  *Science Centre under **Scheme 'C'**- Such Science Centre will be operated and maintained by a Registered Society formed by the State Government. The Society should be formed immediately on commencement of the project. The Registered Society so formed by the State Government will complete the recruitment of the required core staff members within 3 months after start of the construction work. NCSM shall give technical support for recruitment of staff to the State Govt. to ensure candidates with right aptitude are selected.*

- ***Training***

  *Science Centre set up under **Scheme 'A'** – NCSM shall recruit required core staff for running such science centres and provide them adequate training for operation and maintenance of the science centre.*
  *Science Centre set up under **Scheme 'B' & 'C'** – The officers and staff recruited by the Registered Society or by the State Govt. will be trained by NCSM in any of its unit. The State Govt. shall depute them for necessary training on development, operation and maintenance of Science Centre at least one year prior to completing the project. The cost of such training shall be borne by the State/U.T.*

(viii) Schedule of Recruitment:

Sl. No.	***To be recruited and posted within 3 months from the release of the fund by the State Govt.***		***To be recruited and posted within one year from the release of the fund by the State Govt.***	
01	Curator	01	Lower Division Clerk	02
02	Education Assistant	01		
03	Technicians	04	-	-
	Total	06		02
GRAND TOTAL - 08				

(ix) Time Schedule:

For a Science Centre the required time for setting up the centre is 27 months (approx.)

(xi) Content:

The building will have a covered area of 1500 Sq. Mtrs. (approx.) of which 800 Sq. Mtrs will be used as exhibit display halls, 200 Sq. mtrs for Temporary Exhibition area, 500 Sq. Mtrs. as visitors' activity area, exhibit development laboratory, office,. Auditorium, Taramandal (Inflatable dome planetarium), Children Activity Area, stores, conference room/library and adult activity area etc..

Generally the following galleries and facilities will be installed in a Science Centre:

Permanent Galleries:

- Thematic Gallery: The main gallery of the centre will be on a theme of scientific importance as well as of social relevance such as Environment,

Forest, Mountain, Natural Resources, Indigenous Technology highlighting the local resources and their apt utilisation. The exhibits will be mostly interactive and supplemented with visuals, illustrations and artefacts.

- *Fun Science*: A group of interactive exhibits on Physical Science, Mathematics, Geography, Geology, Electronics, Life Science, Chemistry, Computer Science and Information Technology will form this gallery. The exhibits will be providing curriculum support to the students as well as make science learning a fun to the visitors.

Outdoor Science Park:

Science brought outside the boundary of four walls. Interactive exhibits placed aesthetically in the lush greenery of the park. Children play with them while they learn the fundamentals of science. Water body, Aviary, Animalorium, Herbal and Medicinal plant corner, Picnic area for visitors etc. are added attractions.

Taramandal:

The inflatable dome planetarium can provide an excellent way of interactive learning of astronomy. The programme will be held regularly at the centre.

Exhibit Development Laboratory:

This will be used for regular maintenance of exhibits and development of exhibits and kits in future.

Other facilities:

Temporary exhibition hall, Science Library, Conference Room, Office, Store etc.

Educational and Training Programmes:

The centre will hold regular Educational Programmes like Science Demonstration Lecture, Popular lecture, Creative Ability Programme, Sky observation through telescopes, Computer awareness programmes, Science Quiz, Science Seminars and Science Fairs, Teachers' Training Programme, Community Awareness Programme, Anti-superstition Programme, Science Film Show etc. for students, teachers and common people. A Training Hall and a 150-seat Auditorium will be used for these purposes.

There will be a Model School Science Centre where students will learn the basic principles of science through experimentation in science and fabrication of science models, which can be used as teaching aids. This will supplement the formal science education imparted in the schools. There will also be a Children's Activity Corner.

(x) Project time Line:

Programme Schedule		From the date of placing of order
a	Construction of Building	18 months
b	Development of Science Park	12 months
c	Fabrication of exhibits.	24 months
d	Installation of exhibits	03 months (after completion of other facilities)
e	Opening of the centre	27 months (approx)

Clearance from the Government:

For setting up the Science Centre by NCSM all statutory clearances and approvals required by the local authorities of the State Government/other bodies etc. shall be obtained by the State Government.

Special Note:

1. *The land of the science centre shall be chosen in consultation and approval of NCSM*

2. *The land earmarked for the science centre should be free from all encumbrances and encroachment. It should be fully developed land with electricity, water, sewerage connection and telecommunication facility available in the nearby vicinity. The land should have good road connectivity for easy access and transport.*

3. *Apart from the core staff as indicated in the above proposal, other essential services may be outsourced.*

4. *The science centre building will be developed in modular form to provide scope for future expansion, if need be, based on the growth of local population and visitor figures to the centre.*

5. *For Science Centres located in hilly terrains, island territories, remote areas etc., the sharing of the capital cost may be considered on the basis of 90:10 between the Govt. of India and the respective State Government.*

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