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## MEMORANDUM

TO: Members of the Joint Legislative Commission on Governmental Operations

FROM: Philip Carter, PhD  
Chair, Advisory Commission, NC Museum of Natural Sciences

RE: Advisory Commission, NC Museum of Natural Sciences  
Report FY 2015-2016

DATE: September 30, 2016

### Introduction

In accordance with General Statute §143B-344.21, the Advisory Commission (“the Commission”) of the NC Museum of Natural Sciences (“the Museum”) is pleased to submit this 2015-16 Report on its observations and requests.

The Commission met on February 11, June 2, and September 8 with a reception at the Executive Mansion, and has been duly consulted to ensure unanimity over this Report’s contents. Through meetings, event invitations and familiarization tours, every opportunity is taken to orient Commissioners to the Museum in terms of its staff, facilities, mission-advancing opportunities and achievements, budgetary and other challenges, and flow of new developments and profiles. Even by those who thought they knew the Museum well, the universal reaction is amazement over a State resource that deserves to be more widely known for its uniqueness, quality and public value.

With 986,000 visitors to this downtown Museum last year, impressive indeed is the fact that the State’s appropriation costs each NC resident less than \$1.25 per year! At the Museum’s Prairie Ridge EcoStation in west Raleigh, just three full-time employees and approximately 60 volunteers serve another 31,000 visitors annually with programs for 7,500 students, manage 45 acres of reconstructed wildlife habitat, and host approximately 40 ongoing research and citizen science projects. At the Museum’s branch in Whiteville, new as of February 2015, with its population of 5,400, in Columbus County with its population of 58,000, indoor and outdoor educational experiences for children in school and family settings are delivered per capita at less than the cost of a science textbook annually. In a county without a movie theater in more than a decade, the Museum’s Whiteville branch has begun a popular summertime family ‘Movies on Madison’ program assisted by civic officials and local nonprofits.

The Commission is delighted to report on a banner year for the Museum in internal efficiency and external effectiveness terms, ‘doing things right’ and ‘doing the right things’, respectively. The latest chapter of institutional progress was summarized in the annual State-of-the-Museum address for stakeholders last March 31 by the Museum’s Director, Dr. Emlyn Koster. As noted by Harold Closter, Director of Smithsonian Affiliations, who spoke at this event, the Museum is, in many ways, an exemplar of what a 21<sup>st</sup> century museum needs to be as an innovative resource for the advance of understanding at all ages and stages of learning about the natural world. The Commission is delighted that this week Liani Yirka, Head of Inclusion and Accessibility in the Museum’s Community Engagement section, received a Governor’s Award for Excellence and that Commission member Tom Earnhardt was recognized earlier this month with the highest honor bestowed by the National Association of State Parks. The Museum’s commitment to the highest standards of ethical philosophy and practice is reflected in its robust Code of Ethics (please see the first Attachment).

### **2012-15 Reminders**

A museum is a continuous operation with overlapping cycles of activity driven by visitation patterns, featured exhibitions, seasonal programs, grant submission deadlines, and conference seasons, among others. A fiscal year is therefore a rolling snapshot of multifaceted progress.

As a reminder, the Museum embarked on a new chapter in spring 2012 when the Nature Research Center wing opened, enabling it to reflectively ask four vital questions – what do we know?, how do we know?, what is happening now?, and how can the public participate? – in pursuit of its mission to illuminate the interdependence of nature and humanity. For convenience, here are summary recaps of the Commission’s last three Reports.

2012-13: We emphasized the Museum’s forward-looking leadership, the vibrancy of its research and educational mandates, and exceptional benefit-cost performance in comparison to twelve mission-similar US museums. We recognized that while its operational efficiency is impressive, cumulative State appropriation cuts have left the Museum with a funding level lower than before the Museum doubled in size with its frontline-staff intensive Nature Research Center wing. Over the same period, the Museum increased its community volunteerism to an extraordinary annual level of 65,000+ hours and intensified its liaison with the nonprofit Friends of the Museum towards higher earned and contributed revenues.

2013-14: We emphasized the Museum’s surge into national and international spotlights with the federal government’s top medal for outstanding community service by a museum, which was presented at the White House, and through hosting global conferences in biological research and practices of the nature and science museums. We also reiterated the Museum’s alarming operating budget situation with year-after-year cuts with this statement: “... the upkeep of the State’s #1 public sector attraction is falling below the expectations of what has been proudly established and positioned as a world-class research and educational resources as well as a major economic driver ... Across the US, museums with comparable attendance, impact and stature have annual operating budgets \$5-10 million higher than the NC Museum of Natural Sciences”.

2014-15: We emphasized the Museum’s increasing impacts as a significant onsite, offsite, outdoor and online helping hand to the State’s quality-of-life, environmental and science literacy, education and workforce, and economic growth. We noted that stellar achievements, including being the State’s top destination and a pioneer in building and exhibit accessibility by underserved communities and disabled individuals, are feasible because of a unique array of incredible expertise in a service-driven team environment. We expressed concern about an unsightly new glazing problem and safety hazard around the Green Square Complex as well as an occupational hazard for animal care staff over exotic venomous reptile confiscations under Article 55. We also expressed concern that year-after-year operating budget reductions

had become exponentially more difficult for the Museum to overcome with a demoralizing effect on an enthusiastic but seriously overworked staff, many of whom are forced to seek secondary employment to make ends meet.

### **New Department of Natural and Cultural Resources**

The Commission commends the State for its visionary creation of the Department of Natural and Cultural Resources which we understand to be the first such body across the country. Its benefits were promptly evident last March 18-19 when the Museum and NC Symphony partnered to present *Four Seasons* by Vivaldi as a synchrony of sounds and images in celebration of the NC Parks centennial (another joint event will occur on November 18-19 with *The Planets* by Holst). More than ever, the progress and benefits of increased knowledge across the science, nature and culture spectrum need the traditional boundaries of institutional types to blur as much as possible. Being an intensely collaborative enterprise is among the Museum's progressive hallmarks.

Already, the Museum is a cultural force. As reported by the Commission last year, the US Secretary of State described the Museum as a "global ambassador and cultural diplomat" when it connected natural history museums and neighboring schools in Guadalajara, Mexico and Mumbai, India with a school in Cary, NC in a project to track local wildlife with 'camera traps' for collective science learning and cultural exchanges.

Overall, the Museum is a strongly proactive contributor to DNCR's mission to improve, with national prominence, the quality of life in our State by creating opportunities to experience excellence in the arts, history, libraries and nature in North Carolina by stimulating learning, inspiring creativity, preserving the state's history, conserving the State's natural heritage, encouraging recreation and cultural heritage tourism, and promoting economic development.

### **Museum Context**

To ensure its maximum benefits to the State and its profession, the Museum adheres to the tenets of declarations of two recent convenings of the nature and science museum sector:

At France's National Museum of Natural History, Paris; October 2007

*Given that science is critical for sustainable management of biodiversity and ecosystems and, through it, survival of human populations on this planet, the vital contributions of these institutions are fourfold: a) They are the primary repositories of the scientific samples on which understanding of the variety of life is ultimately based; b) Through leading-edge research they extend knowledge of the structure and dynamics of biodiversity in the present and in the past; c) Through partnerships, and through programs of training and capacity-building, they strengthen the global capability to address current and future environmental challenge; and d) They are a forum for direct engagement with civil society, which is indispensable for helping bring about the changes of behavior on which our common future and the future of nature depend.*

At the Smithsonian's National Museum of Natural History, Washington, DC; February 2012

*Humanity is embedded within nature and we are at a critical moment in the continuity of time. Our collections are the direct scientific evidence for evolution and the ecological interdependence of all living things. The human species is actively altering the Earth's natural processes and reducing its biodiversity. As the sentient cause of these impacts, we have the urgent responsibility to give voice to the Earth's immense story and to secure its sustainable future.*

Specifically, and in concert with the Governor's and DNCR's priorities on excellence, education, efficiency and economic development, the Museum has recently defined, with performance metrics, the strategic objectives for each part of its organizational structure, as follows:

Through the Director's Office, the institution's entire team, functioning holistically and alert to local, regional, national and global needs, exemplifies the greater potential of nature and science museums by expanding resources for the institution, demonstrating its unique public value, and helping to advance the field as a whole through sharing of its best practices.

The Resource Administration team oversees the resource needs of the institution, staff and visitors by managing its portfolio of business services, including human resources, budgets and grants, information technology, and facility and security services in close cooperation with state government, university and other partners.

The Research & Collections team increases knowledge and insight about the natural world by collecting, preserving and documenting specimens and objects, conducting original research, making data and results available and accessible to the broader scientific community and to the public, and inviting society's participation in collections and research opportunities.

The Living Collections team increases awareness and understanding of the animal world by maintaining, displaying and interpreting a healthy living collection, promoting conservation, enhancing the visitor experience through integrated approaches to exhibitions, onsite and offsite programs, and advancing the fields of animal husbandry and wildlife veterinary medicine.

The Exhibitions & Digital Media team propels the institution's collections, research and programs to the forefront of public knowledge and enjoyment by developing and maintaining an engaging array of interpretive experiences and media that address the learning styles of a diverse public and the changing knowledge about natural and cultural environments.

The School & Lifelong Education team engages all ages and backgrounds by creating and delivering a menu of engaging and inspirational learning experiences onsite, offsite, online and outdoors to assist with the understanding and appreciation among students, teachers and the public of the natural sciences, the natural world, and humanity's relationship with it.

The Community Engagement team maximizes the institution's positive external impacts by understanding, attracting, welcoming, involving, engaging and re-engaging traditional and nontraditional audiences with a scheduled menu of topical programs and events, excellent and inclusive visitor service, and effective marketing and communications strategies.

The Regional Network team connects communities statewide with the natural world by developing and maintaining programs, services, partnerships and learning areas geared to the needs of each region and providing administrative oversight and program optimization for the satellite branch in Whiteville, Columbus County, and the state's science museums grant program.

The Development team, integrating the institution and its supporting Friends organization, manages and grows contributed revenues by linking the internal array of supportable activities with external sources of government, corporate, foundation and individual support, in turn building member and donor loyalty and the institution's capacity to advance its mission.

As the State envisions West Jones Street as a 'cultural corridor', the Museum is proactive with its vision for both an enhanced visitor arrival experience opposite the Legislative Building and, adjacent to the iconic Daily Planet architecture, an enhanced street-level transparency into the purpose of the Nature Research Center.

### **State Budget and Other Support**

The Commission profoundly appreciates the Museum's first unreduced operating budget in 2015-16 since 2012 and an unprecedented measure of capital investment for priority deferred maintenance needs; its new

NC-wide Science Museums Grant Program which this Commission assists by providing three of five members on its External Review Panel; acceptance of the findings of its joint report with the NC Museum of History that these two downtown museums (who, together with the State Capitol, State Legislative Building and Executive Mansion, have coordinated school group reservations) have ongoing free general admission, like the NC Museum of Art, as the only feasible, maximum accessibility, approach; and reaffirmed support for the Museum's satellite branch in Whiteville, Columbus County (please see the second Attachment).

The Commission is also grateful to the Department of Administration for its decision that the Museum's internal and external glazing problems be tackled as an emergency matter for permanent resolution, including the removal of all temporary scaffolding and barriers, and restored use of the patio outside the Daily Planet Café; and to DNCR for working with Museum staff and third-party agencies, including the NC Wildlife Resources Commission, towards procedural amendments in Article 55 to eliminate life safety risks. These two matters are addressed further on page 7 in this Report.

### **Museum Achievement Highlights**

The Museum was the State's most visited destination in 2015 as reported by the Triangle Business Journal and the top-rated attraction in Raleigh as measured by TripAdvisor. In other indicators of its stature, ABC News in New York requested access to the Museum's weekly Science Cafés for its livestream site; the Museum is the world's first to equip public facilities and exhibition galleries to be accessible to the hearing and vision impaired, a feature which just attracted attention from government operations in Wellington, New Zealand; The Tampa Bay Times recently reported that the area's new Museum of Science and Industry views the NC Museum of Natural Sciences as a national benchmark to inform the design of its learning experiences; the Greater Raleigh Convention and Visitors Bureau has increased use of the Museum as an ambassador in its nationwide promotions; and the Smithsonian's Science Education Center's National Advisory Board, in cooperation with NC's Science, Technology and Mathematics Education Center, chose the Museum as its fall meeting venue with a keynote address by Dr. Koster.

Among the tangible indicators of the Museum's standing in its field, nationally and globally, is the number and caliber of invitations and publications. In 2016, these included the preface and a chapter on how museums assist schools and communities after a disaster strikes in Rowman & Littlefield's book titled *Fostering Empathy through Museums*; the chapter about nature and science museums in Routledge's new book titled *Museums, Ethics and Cultural History*, a 70<sup>th</sup> anniversary project of the Paris-based International Council of Museums; a peer-reviewed article on North Carolina's national model museum-university partnerships in the Journal of Museum Education; and new books by Johns Hopkins University Press on 'camera trapping' and by The Overlook Press on 'citizen science'. Next month, the Museum is a joint local host with the Raleigh Convention Center in welcoming the largest ever annual conference of The Wildlife Society which was founded in 1937: Dr. Koster has been invited to welcome its 650 delegates to Raleigh, plus the Museum has four free registrations and hosts a reception and backstage tours.

### **Museum Accreditations**

The Museum was first accredited by the American Alliance of Museums (AAM) in 1979: today it is among the less than 10% of the nation's approximately 35,000 museums that opt to achieve and maintain compliance with its exacting requirements. Involving comprehensive documentation that looks back, takes stock and looks forward, and a 3-day site review by two peers from other major museums, AAM's reaccreditation protocol ensures that the Museum adheres to the highest professional standards of operations and impacts. Last reviewed in 2001 (the NC Museum of History is also accredited by the AAM), 2016 has seen the Museum diligently submit all documentation in its reaccreditation and involve civic agencies,

DNCR, the Advisory Commission, and Board of the Friends of the Museum in the site review. The Accreditation Commission of the Alliance, which is headquartered in Washington, DC, meets in mid-October and we eagerly await its updated conclusions which we will share as a Supplement to this Report.

As well, the Museum is underway with the application process towards accreditation by the Association of Aquariums and Zoos (AZA), headquartered in Silver Spring, MD (both the NC Aquariums and NC Zoo already have this accreditation). The Museum has approximately 1,200 living animals which are incorporated into exhibits as well as onsite and offsite programs, making this institution one of the largest indoor zoos and aquariums in the country. As such, it stands to be a new kind of AZA accredited institution.

### **Museum Leadership**

The Museum's stellar achievements are feasible because of topnotch expertise in a service-driven team environment, profoundly dedicated to the Museum's mission of illuminating the interdependence of nature and humanity. The Commission commends Dr. Emlyn Koster, his leadership team of Debra Gardner and Dr. Jason Cryan, other Section Chiefs Elizabeth Baird, Roy Campbell, Robert Flook, LuAnne Pendergraft and Charles Yelton, indeed the entire organization of full-time staff, part-time staff, volunteers, and interns, as well as the Friends of the Museum.

The State is indeed fortunate to have at the helm of the Museum a CEO of the caliber of Emlyn Koster. Internationally recognized, he has continued to build upon the work of his predecessor, Dr. Betsy Bennett, recipient of the 2014 North Carolina Award for Public Service. Dr. Koster has taken the Museum to a new level of national and international recognition through his prodigious publishing and speaking engagements as well as through his masterful administration of both professional and nonprofessional members of staff and his commitment to furthering their development. Members of the professional staff, exceptionally talented in their own right, have contributed to the Museum's growing acclaim through their own research publications and efforts at outreach. The fact that so many constituent campuses of the University of North Carolina have extended courtesy or joint faculty appointments to both senior and junior members of the Museum's staff testifies to their high quality. This extension of the Museum to university campuses benefits both the UNC System and the Museum by enhancing the teaching and research missions of both and providing an advantage to each in the competition for grant funds from federal and private sources.

### **Commission Requests**

#### **1. Appropriation**

During 2014-15, the Museum reached a feasible limit of doing more with less which is why the State's un-reduced appropriations in 2015-16/2016-17 have been so profoundly appreciated. A museum's most obvious overall performance measure is its annual attendance. Last year, the NC Museum of Natural Sciences welcomed 986,000 onsite visitors – giving Raleigh the nation's highest ratio of museum attendance to city population – and with 30,000+ on just one Saturday for its annual *BugFest* celebration.

Due to insufficient staff to sustain operations at current levels, the Museum has regrettably had to reduce opening days at its Prairie Ridge EcoStation; reduce the weekday opening hours of its highly popular Tropical Conservatory; and discontinue its Thursday evening openings of the Nature Research Center (but not Science Cafés in the Daily Planet Café). All possible measures have been taken to merge critical functions under fewer positions and to reallocate vacant FTEs to functions of most need, which are to date all in private sector fundraising.

Compounding this situation is the fact that the Nature Research Center wing – particularly its Daily Planet Café, three floors of exhibition galleries and open laboratories, and Environmental Conference Center – are the parts of the Museum most frequented by State legislators and senior officials for special events and lunchtime use. Their relative newness conveys misleading impressions about the Museum's

overall resource level; its dire shortage of part-time staff; pressures from intense public use; crowding of back-stage office areas; and its highly dedicated and productive but overstretched staff who earn some of the lowest salaries of any comparable major museum across the US.

The Commission wishes to remind the Administration and Legislature that the Museum's Nature Research Center addition began an unanticipated major, and ongoing, imbalance: on the one hand, doubled space, increased services and significantly increased visitation, and on the other hand, operational funding less than planned during the capital project with cumulative annual reductions during its post-opening period. The good news is that an increase to the Museum's appropriation of approximately \$2 million would make an immense and immediate positive difference.

*The Commission requests, starting in 2017-18, that the Legislature fund an appropriation increase of \$2 million by whatever direct and/or supplementary means are available.*

## **2. Glazing**

Around the Museum's Nature Research Center, and since September 2015, there remains unsightly scaffolding as a protective precaution for visitors and other pedestrians against spontaneous glass breakage which without warning may result from nickel sulfide impurities in the glass. Scaffolding does not eliminate the risk of fatal climb-and-fall accidents plus it erodes public confidence in government buildings. There is also the significant matter that Rocky Top Catering, under contract with the Friends of the Museum to operate the Daily Planet Café, is being denied revenue from its patio.

As noted on page 5, DNCR is proactive in working with the Department of Administration towards a permanent, aesthetically-pleasing, solution.

*The Commission requests that the Legislature fund the total repair solution in a timely manner.*

## **3. Article 55**

The Museum has an unfunded mandate to accept, care for, and potentially euthanize confiscated venomous reptiles pursuant to Article 55. Privately held venomous reptile collections in North Carolina often contain deadly snakes from around the world. When law enforcement officials confiscate venomous reptiles from private collections, Article 55 currently requires that these confiscations be brought to the Museum (or its 'designated agent') for housing and potential euthanasia. Euthanasia would require handling but there is, in fact, no safe way to handle a venomous reptile without appropriate facilities and locally-available anti-venom. Also, the Association of Aquariums and Zoos to which the Museum is applying for accreditation regards euthanasia as an unethical practice. As long as the overall legal matter remains unresolved, public servants at the Museum are either placing themselves at risk of death or are obliged to break the law, which is clearly an untenable situation.

As noted on page 5, DNCR is proactive in working with the Legislature and agencies such as the NC Wildlife Resources Commission and a growing list of potential 'designated agents' to divert exotic venomous reptiles to equipped venues away from the Museum.

*The Commission requests that the Legislature expedite amendments to Article 55 when new and safe procedures are developed.*

## **4. Commission's *ex officio* Membership**

The Commission's current *ex officio* membership includes representation from DACS, DNCR, DENR, Marine Fisheries, Wildlife Resources Commission, as well as the Museum. This has not changed, perhaps ever, since the Legislature created the Commission in 1960. Yet the Museum's relevance has evolved to now also assist the responsibilities of other parts of State Government, most notably Commerce and Tourism, Persons with Disabilities, and Public Instruction.

*The Commission requests that the Legislature add senior, position-aligned, officials from the Departments providing services to disabled persons, informal science education, teacher professional development, and heritage tourism to its ex officio membership.*

## 5. NCVIP

State Government has approximately 85,000 full-time employees and one performance evaluation system for all employees. In the private sector, job functions as diverse as those spanning State Government would straddle a myriad of industry types but with each one supported by a customized staff performance evaluation system.

The Commission recognizes the need for top-level consistency across the Public Service to address priorities and spur innovations. Driven by its ethos of public service in the specific context of a major nature and science museum, the NC Museum of Natural Sciences has informally added a Division-specific instrument to the state-wide NCVIP which was attached to the Director's evaluations of his management team with their unanimous endorsement (please see the third Attachment).

*The Commission requests that the Office of State Human Resources consider the Museum's example of how each and every part of the Public Service could develop and use a supplementary customized instrument to the State-wide NCVIP system.*

## In Closing

I know that I speak for all members of the Advisory Commission that it is a pleasure to serve the State of North Carolina in providing this Report of the accomplishments, status, and needs of the NC Museum of Natural Sciences. In providing this service, we share in the pride that the people of our State justifiably have for this beautiful jewel that contributes so much to making North Carolina the special place that it is for all its citizens.

The Commission welcomes follow-up questions and comments on this Report. As mentioned above, a supplement will be provided when the Commission receives the reaccreditation report on the Museum from the American Alliance of Museums.

Also, the Commission wishes to remind Legislators and senior officials to visit the Museum's front-of-house and/or back-stage areas with work colleagues and/or family members. Please call upon the Office of the Museum Director (919-707-9802, [emlyn.koster@naturalsciences.org](mailto:emlyn.koster@naturalsciences.org)) to schedule a briefing and/or tour of any length.

Respectfully submitted,



Philip B. Carter, PhD  
Chair

Attachments:      Museum's Code of Ethics  
                         Published article titled *Bringing the mission to the community: state museum opens a satellite in an underserved rural region*  
                         Museum's NCVIP supplement for managerial employees

Copies:              Members, Museum Advisory Commission  
                         Emlyn Koster, PhD, Museum Director  
                         Keith Poston, President, Friends of the Museum