

Introducing the Earthwalk Traveler September 30, 2018

I: WELCOME AND INTRODUCTION

Good morning. Welcome to our poster session introducing the Earthwalk TravelerSM, a new traveling exhibit from the National Scenic Visitors Center. Please be sure to sign in on one of the clipboards. So, who are we?

- I'm Mary Ellen Snyder, Executive Director of the NSVC and co-inventor of the Earthwalk USASM map
- Here with me today is Amy Hollander – our ace strategic consultant – who came to us fresh from launching the National Museum of Industrial History in Bethlehem PA
- Matt Kambic, President of the NSVC and map co-inventor sends you his best regards from his home in New Zealand. He will be in the US next spring to meet those of you who will be at the AAM show in New Orleans.
- Our Board, Advisors, Consultants, and most of our Volunteers and Interns are highlighted on our Biobrief sheet. We are thrilled to have a score of highly qualified and talented people moving our project forward.

This is what we are here to tell you about today:

1 – The NSVC and Earthwalk USA – what are they?

2 – The magical mix: how our Earthwalk Traveler was born

3 – Why is this important?

4 – What makes the Earthwalk Traveler unique and how can it help with 21st century challenges?

5. - Our mission

6 – What design considerations are we addressing?

We've planned a decent interval for your Q&A, as well as some Q&A of our own, so please hold your questions until then, and everyone will benefit from them.

NSVC

In 2013, Matt Kambic and I discovered that we had each independently conceived a vision of a giant, three-dimensional, walkable map of the United States. Matt's epiphany was inspired by his passion for hiking America's wilderness, and a lifelong fascination with maps, while mine came from my frequent coast to coast travels at an altitude of 36,000 feet. We discovered each other through the good offices of Dan Beaupre, Vice President – Experiences at National Geographic. Dan – who is Director of their National Geo Bee, in which millions of students have competed– led the creation of National Geographic's Giant Map program: large rollout maps of states, nations, oceans or continents are shipped to schools, along with imaginative educational materials. They unroll it in the gym, the kids take their shoes off and run all over the map – learning geography as never before.

Dan says, “Experiencing a map of this size can really awaken a student to the power of maps and the limitless depths of geography.”

Together the three of us recognized that millions of people might never have the opportunity to experience the spectacular beauty of our national landscapes, and to explore— step by step— the great breadth of the nation’s mountains, our vast plains, rivers, cities, and shores. We spent the next three years investigating how to make our vision a reality. We founded our 501(c)3 non-profit in 2016.

NSVC and the Earthwalk USA Map

Imagine, if you will: A giant 300-foot-long walkable map in a dome – the National Scenic Visitors Center.

Just imagine – the sun is rising and slowly moves across the country – accompanied by a wave of birdsong -- the dawn chorus -- from Maine to California – did you just get chills?

Now, picture it: GeoshowsSM are lighting up the map surface, dramatizing educational stories from the sciences, history and culture

Surrounding the map are the State Rooms featuring all fifty States, and exhibits highlighting our magnificent National and regional parks

Now we’re walking to Alaska -- and then we’ll be wading in the pool around Hawaii – they are in separate domes, in correct geospatial relation to the continental map

This is where people say, ‘Where is it? When can I see it?’

So we took the initial steps to define the project -- resulting in our conceptual video, which I hope you will check out on our website, www.nsvc.us (Kudos to Cadnetics in Pittsburgh for their contribution on this.)

With this concept in place, we successfully competed to get a team of prominent Business and Engineering students from Lehigh University to help develop the business plan and initial design considerations for the exhibit.

We expanded our Board and got started raising funds.

Then we reached a turning point.

Earthwalk Traveler

The notion of the Earthwalk Traveler exhibit was born out of a partnership with strategic museum consultant Amy Hollander. The idea was simple: design a 60-foot long prototype of the Earthwalk map, with Geoshows and other interactive exhibits – and bring it to a national audience, by developing a traveling exhibit.

Not only would we be able to create a dynamic exhibit that could move from museum to museum, but we could build awareness of potential for our permanent facility as the exhibit traveled across the country.

We are designing this Earthwalk Traveler to become a shared national experience. It will also be a world-class learning experience -- **for all ages.**

Our vision is to create a tactile, immersive exhibit -- reimagining the United States – from a bold new perspective, that will reveal

- Its remarkable physical nature
- its extraordinary breadth and beauty
- it's fascinating history and
- the many layers of our cultural identity

The Traveler will be 6,000 sq. ft. in size. And as we said, the map is 60 feet long from Maine to California and include Alaska and Hawaii, with a default footprint of 2,400 sq. ft.

As with the NSVC, we will also have the cutting-edge Geoshows on the map surface -- dramatically telling diverse educational stories on topics ranging from biospheres and tectonic plates, to the journey of Lewis and Clark, the Trail of Tears, and the impact of climate change on the coastlines. Lively interactive exhibits will bring more of the Traveler's scientific, cultural, and technological lessons to life.

We expect to make a powerful impression on visitors who walk the map: an experience that will give visitors such a vivid grasp of the beauty and resources we have been given that they are inspired to give back...and to protect these gifts.

Currently we are in the design build phase of the project, working with MZB Productions on developing the prototype for the map.

The Earthwalk Traveler will be engineered and constructed over the next three years. It will be developed in partnership with university, private and corporate organizations across the US.

For the following three years, Earthwalk Traveler will tour the country being showcased at up to three major museums a year.

II. OVERARCHING ISSUES THE MUSEUM ADDRESSES

Intro

Why are we developing the Earthwalk Traveler? Now more than ever, as we struggle with 21st century challenges, we need to build:

Better knowledge of geographical literacy

Greater awareness for the significance of our natural resources

Deeper appreciation of the beauty of our natural landmarks

Stronger connection with our natural landscapes

A more thorough understanding of our cultural history

A reckoning of how we as a species have and will continue to impact the land over time.

The Earthwalk Traveler will be designed

to enhance a shared appreciation of the natural landscape

to inspire social responsibility

excite the interest for those less inclined to venture out of their urban environments

but also to be a haven for those who are already invested in the outdoors

Most importantly, the Traveler will remind the public that our national landscapes belong to each and every American regardless of net worth, race, or ethnicity

And inspire them to cherish what they own, or be faced with the risk of losing them for now and future generations.

How will the Traveler answer these needs?

It starts with what we know (political boundaries as the most conventional view)

What is defined

What is expected

It wipes the political lines of the map away, giving our visitors an opportunity to see the same iconic shape with new eyes.

the geological formations and watersheds

the cultural migrations (human and animal)

the historical growth of the nation

the scientific explorations

the impact of mankind on the climate and on the land.

In the process of reimagining the map, we are hoping to transform how our visitors experience the world around them.

Geographic Literacy

A recent National Geographic survey of adults from 14 different first world countries placed Americans second-to-last when it came to geographic knowledge. In another survey, 29% of young US citizens couldn't identify the location of the Pacific Ocean.

Geography matters more now than ever because we live in a globalized world.

Nearly all business is international.

We can converse as easily with someone on a screen halfway around the world as we can in a cubicle down the hall.

By 2055, the U.S. will not have a single racial or ethnic majority.

Since 1965, our country's foreign born population has tripled.

It is imperative that we understand the differences and similarities of living in locations all around the country and the globe as well as the complex relationships between cultures at home.

May seem strange, even as more important than ever, it is becoming less valued in schools

Reports show that more than half of the country's social studies teachers spend 10 percent or less of their time on geography.

What is more, a majority of states do not require geography courses in middle school or high school. In fact, geography is a required high school course in only six states.

History, different cultures and current affairs can hardly be understood without a grasp of geographical context. So devaluing geographic education, says a recent essay, 'leaves students, and eventually adults, clueless.'

The Geography Gap

Surveys show that while 75 % of the country has only a basic grasp of geography—like matching a country to its continent.

Less success in being able to tell the difference between specific countries and states.

Questions about population, language, and religion had poor results

Need to understand the relevance of cultural and demographic knowledge to their daily lives

Do you remember memorizing the oceans, continents, states and state capitals as a child
...did it really stick? Have you found that memorized information still informs your
understanding of how the country works?

We believe when geography and life intersect, people pay attention. How can we better
connect geography and life in the minds of our visitors?

Natural Landscapes and Resources at the Crossroads (Healthy living)

Let's talk about our national landscapes...what's being preserved and what's at risk.

First national park – Yellowstone – was founded in 1872

400 plus national parks, and grasslands sites in 2018

305 million annual visitation

500,000 sq. mi

14 percent of the land area of the United States.

Sounds pretty good, but National Park Service (NPS) at a pivotal crossroads—2050 projections find notable risks:

World population reaches nine billion.

Putting 20 percent of the world's natural ecosystems at risk

Declining growth per-capita visitation to national parks, relative to U.S. population

Sites underfunded 12 billion dollar maintenance backlogs

These realities reflect an Existential Issue

Air to breathe

Water to drink

Food to eat

Waste Disposal

Energy for heat, technology, transportation

Risking our natural land and resources

According to former Secretary of the Interior, Sally Jewell, the existential threats of climate change, unchecked development, underfunded parks and the demand of increased natural resources for an ever-growing population threaten to transform our “national parks and wildlife refuges,” into “postage stamps of nature on a map

How can we build awareness for the importance of our diminishing natural resources? How can we build a stronger understanding of why we need wilderness and open lands

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Connection with our Natural Landscapes and the results of the disconnect

While a Harvard study found 94.8% of Americans believe that it is important to preserve national parks for current and future generations, our disconnect with nature is a growing national problem.

People are spending more time indoors

American adults spend less time outdoors than they do inside vehicles—less than 5 percent of their day.

Only about 10 percent of American teens spend time outside every day.

This is a rapid and widespread change. 70 percent of today's US mothers recall playing outdoors every day as children but only 26 percent of them say their kids play outside daily now

Scientists have tied this trend to an increase in cases of depression.

International studies show that a 15-minute walk in the woods causes measurable changes:

a 16 percent decrease in the stress hormone cortisol

a 2 percent drop in blood pressure

a 4 percent drop in heart rate.

How are these trends reflected in how we use our parks?

Visitation has dropped drastically among visitors under 30, from 27 % in 1989 to 19 % in 2004

Parks are failing to attract a more diverse public, attracting 36 % of white Americans

compared with 27 % of Hispanics, and 13 % of African Americans. It is a compelling concern

because these latter two demographic groups are driving U.S. population growth.

Why are these numbers so low?

Internet connectivity

A large majority of Millennials—71 %—said they would be “very uncomfortable” on a one-week vacation without internet connectivity.

For Boomers like me, that discomfort was still 33%.

In our parks, there has been slow adoption of multicultural stories that better express our national identity

National Parks have been late to the game in refocusing efforts on diversity and multicultural marketing outreach.

How can we convey to people that our relationship to our environment is symbiotic? Why do we as a culture need this connection with nature?

The Winds of Change -- and our impact

Before we can convey the impact of mankind on the land we have a great deal of work ahead of us, mostly focused on dispelling our cultural assumptions. I'd like to share 3 examples that the Traveler will be addressing:

Overemphasis on iconic political borders to define our geography – geologically speaking

Arbitrary--Political Borders changed as the country grew

8 regions

25 Physiographic provinces in the US

Geological regions – like watersheds -- cross state and national borders

Our geologic footprint exceeds generational memory -

Open space and farmland as we see it now is being displaced

Before 1620, people arriving from Europe encountered Primeval forest

For every person added to population since 1620. 100-200 acres was converted to farmland

By 1920 a quarter of America's forests were destroyed. 250 million acres of trees.

This represents a radical change to the landscape that we don't even remember today

So we have to ask ourselves what will the cultural assumptions of future generations be as resources and landscapes disappear

Drinking water seems infinite

World's largest aquifer (Ogallala which runs from Nebraska to Texas) is 9% down since 1950.

Area along the Mississippi river experiencing drinking water shortages

California and New Mexico

By 2050, 1.8 billion people worldwide could live in areas where groundwater is gone

Don't get me started on invasive plants

The American Lawn is made up of invasive plants

40 million acres of lawn

\$40 billion per year on lawn care

30,000 tons of pesticides annually

800 million gallons of gas for mowers annually

Lawns shed as much rainwater as parking lots, causing pollution, erosion and sedimentation that choke out life in all our waterways

How can we dramatize the story to actually reflect the degrees of change and to explore how we are changing the face the earth and its climate? How can we make the public aware that every step has an impact – good, bad or indifferent.

III. WHAT MAKES THE EARTHWALK TRAVELER UNIQUE? AND HOW WILL THE EARTHWALK TRAVELER ADDRESS THE CHALLENGES WE'VE PRESENTED?

1- How can we better connect geography and life in the minds of our visitors?

2 - How can we build awareness for the importance our diminishing natural resources? How can we build a stronger understanding of why we need wilderness and open lands

3 – How can we convey that our relationship to our environment is symbiotic? Why do we as a culture need this connection with nature?

4 - How can we dramatize the story to actually reflect the degrees of change and to explore how we are changing the face the earth and its climate? How can we make the public aware that every step has an impact – good, bad or indifferent.

We believe that Earthwalk Traveler will be the stage on which we can help our visitors to navigate these 21st century challenges. Exploration leads to understanding-- We believe that true understanding comes through exploration, both the physical exploration of new and wonderful places as well as explorations of the mind across intellectual, ideological or imaginative terrain.

The Traveler is an exhibit that guides our visitors on this journey. This journey has four steps:

As many paths as there are people

We cannot tell people what to do or how to do it. We can only encourage them to find their passion and challenge them to take responsibility for their actions.

As educators we know that people learn in different ways.

Diverse Learning Styles-

Visual

Aural

Verbal

Physical

Logical

Emotional

In addition, as museum professionals, we are aware that 21st century museum design needs to include an element of public engagement and curation

Participating in exhibit design

Opportunities for discussions

Places for commentary

Our challenge is to design an exhibit that will appeal to an ever growing, diverse audience with diverse learning styles and visitor engagement

Earthwalk Traveler will create diverse paths that lead to the same location.

The entrances will be distinct and unique

The pathways will have different flavors – choice – which is most appealing to them

There will be touch points of commonality

Paths converge to give peeks into the other areas

Potential pathnames:

- Wilderness Expedition

- Religious Pilgrimage

- Scientific Investigation

- Ethnic Migration

- Historic Exploration

- Culture Explosion

The goal of these doorways is to appeal to diverse learning styles. They encourage curiosity and most importantly create a vehicle for shared experiences among the visitors

Seeing with new eyes

We are committed to creating an environment that encourages openness to the country's rich and varied landscapes, populations (animal, vegetable and human), ideas, stories, heritages, and experiences.

Our Geoshows use the shape of the country as a blank slate on which you can project 100 stories. Remember that birdsong I had you imagine? What might appear on that slate?

Perhaps 250 years of border changes -- including tribal borders – starting way before the colonies were established

From the Spanish settlements in FL and CA, eventually to the colonies and territories as they spread west across the land, to the eventual inclusion of Alaska and HI

Or what about the physiographic regions of the country and how they shape the animal populations -- or the economy?

Animated narration of Lewis and Clark trail?

Climate change impact outline of the country?

We said the Traveler allows you to see with new eyes. The Traveler breaks down our preconceptions by replacing them with surprising revelations.

Putting “Feet to Earth”

We strive for a strong connection to nature, to our resources and to the sustainability of the planet. This can only happen if we build awareness of the simple connections between our words and our actions, between our feet and the earth.

Can you picture a middle-school class exploring this 2400 sq. ft. map, finding their hometown and school, measuring the borders with their bodies, counting the steps from Florida to Seattle, finding the actual spot where the *Close Encounter* was filmed? Using their feet, hands and imaginations to turn the map into a geographical playground?

Panels that create energy - Virtual interaction between the visitor's walking and sensory experiences in response –like lighting up a zoomed in view of a grizzly fishing in a mountain stream. What if your footsteps reveal a storm actually happening beneath your feet? If you're like me, you have one experience of a childhood museum you'll never forget. For me, it was walking through the heart in the Franklin Institute. For Amy, it's going down to the Coal Mine under Chicago's Museum of Science & History. For you it might be LA's LeBrea Tar Pits, where you watch the bubbles of gas from the decomposition of dinosaurs emerging....ever so slowly....

(A short demo involving a puzzle composed by a graphic of the Facebook Friendships across the US)

You may be wondering why we call this 'Feet to Earth'. Because we could have just put it up on the wall and told you that this is a picture of FB friendships. But in that case, you would not have explored it, you discovered it together, making a qualitative difference in your experience.

Sowing seeds of stewardship

The Traveler is only the first step of many on journey that will inspire our visitors to take adventures across the country, around the world and throughout their lives.

We want our visitors to
take what they learned with them on the road.
To not only share it
act on it as well.

For example, on a giant screen, make a demonstrable pledge, ‘walk the talk’ and sign up to:

- donate
- volunteer
- visit national parks
- establish annual hiking goal
- lessen their carbon footprint

So we don’t have a giant screen here today, but each of you do carry your own personal hand held devices. We would like you to take a meaningful action today.

Paul Butler’s 2010 Visualizing friendships image on our NSVC Facebook page.

Like or share the image with your friends

Challenge all of you to find a way to weave this reimagined knowledge into your day-to-day interactions during the conference and share it when you return home. You took “literal steps” to understand something new about something that is considered canon—how out borders are defined. You will share it, whether on Facebook or with friends, family and colleagues, by sharing what you learned here.

If we are doing this right, the Traveler will have educated you and inspired you to share what you learned once you leave here because Earthwalk Traveler’s mission is

***To share the wonder of America’s diverse landscapes,
instilling the passion to explore and the will to protect.***

IV. DESIGN CONSIDERATIONS

You have seen how we can do this in a very low tech way, in a poster session with some simple handouts and a lot of imagination. Now let us talk to you about the design and technology considerations that will be showcased in our travelling exhibit.

The Basics

Types of museum – research indicated that science centers would connect based on terms of mission. Aligned. Highly varied learning styles and large temporary exhibit galleries

What best size? 1,300 museums across the country have capacity for a 6,000 sq. ft. exhibit

Flex design, which will accommodate different temporary gallery spaces and more condensed versions of the exhibit for smaller galleries

How long will the exhibit show in each location? 3 months

Setup and breakdown concerns. 10 days for set up and 10 days for breakdown

Geographic distribution—Continental United States, Hawaii and Alaska

Multigenerational, multicultural target audience

Sales of collateral??

Rental prices? \$200,000 for 3 months

Technological needs

ceiling/scaffolding hung projectors

interactive kiosks with embedded systems and audio

Wifi access

Universal Design - ADA accessibility addressed

Table heights and viewing sightlines,
font size and color

ramp rise, railings, turning radius and level changes

cane detectable barriers

critical height ratings of surface material,

slip and grip on surfaces

audio descriptions, tactile tours – accessible to as many people as possible

The Map

Physical 3D relief map

Visually user-friendly, geographically competent, and physically striking

Durable enough to withstand wear and tear without losing its relief, identifying graphics

Slanted/beveled edge that meets ADA compliance

Material meets critical height ratings for surface materials

Non-toxic, non-gassing

Capable of being projected upon with overhead projectors and lasers with appropriate legibility, and/or using digitally controlled lighting embedded in map material, and/or from below with built in technology

Transportable

Geoshows

Our Geoshows use high-power projectors with software technologies to create precise projections on complex three-dimensional surfaces.

3D surface is recorded with a scanner and computer-modelled in 3D.

Special software used to compute the different projector positions

Create comprehensive, sharp, projections of images or animation onto the 3D surface

Geoshows can be triggered by an Interactive touchscreen monitor or foot activated trigger for visitors' interface . Multiple kinds of content to be projected onto the model – this is where the 100 stories come in.

Built-in metrics -- Data collection

Accrued demographics through interactive kiosks

GIS tracking of pathway selection

Energy generation

Stewardship pledges

Post Visit Activities

Interactive website which will allow visitors to share their experiences on social media.

Visitors will be able to share their experience with that of other visitors

Visitors can engage with this site to compare regional differences as well

Accompanying materials

Marketing package for host museum

Educational resources tailored to regional curricula and special needs audiences

Operational support package to aid with technological questions

V: Questions and questions session

Availability: Building over the next 3 years

Too early in the design for specific commitments, but we are anticipating making it available at market rates, currently around \$200K for 3 months. So many dependencies; with the right funding, this could be modified dramatically.

Our Q&A - Some backup questions

One of the biggest debates we are having is the Importance of AR/VR

In a scientific museum, is it more important to reflect the actual scale or have a dramatized scale (exaggerated vertical scale)

We could have a white map that is colored by light projections or a colored map that isn't dependent on the light show activity but might not be as effective a surface for light projections. Your thoughts? Separate maps – walkable colored map and white vertical projector map

Encourage you to attend our Walkthru session

GOTO website, spark page, like and follow us on FB