

# Great Cities Great Lakes Great Basin

## A design vision for the 21st century

**We must change how we live in order to protect the integrity of the world's largest freshwater asset, our Great Basin.**

**We can move beyond boundaries and rally as one around our vast and vulnerable watershed.**

**We are calling for a 100-year vision for this remarkable region.**

A 21st Century Initiative of  
Skidmore, Owings & Merrill LLP

Partners  
International Secretariat for Water  
Chicago Architecture Foundation

Participants  
Thirst  
Great Lakes and St. Lawrence Cities Initiative  
The Land Institute  
The Brookings Institution  
National Parks Conservation Association

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**Gzhe-Mnidoo Chi-miigwetch  
kina gego ga zhitoowin,  
chi-zaagigannan,  
kitchi-gaaming, sibi kina  
wii minikwewing.**

**Bish apji smashkawissinwad doon  
mashkiki-nod miimwa baadziwinwad  
eta wad Ginibiiminaan.**

**Naad-meweshinang jii  
mna-nokiyaang wii  
nadendmaa doon bish na.**

**Chi-miigwetch.**

**For those of us gathered here,  
for concern for the water,  
those in our city,  
country and in our world,  
we ask harmony and  
balance in a good way.**

**We look forward to each of us  
to stand up for our waters  
and to stop the destructive pollution of our  
water.**

**May the water be kept safe for All.**

**Georgina Roy  
Ojibwe First Nation M'Chigeeng of Ontario**

## OUR CHALLENGE

# Our Great Basin

## VAST YET VULNERABLE

The land and waters of the Great Lakes,  
St. Lawrence River and Gulf of St. Lawrence



### Earth's largest reservoir of surface fresh water

Our watershed holds 20% of earth's  
fresh water and 80% of North  
America's. It is only 1% renewable.

### Home to 51 million people today

With 26–100 million more  
expected this century

### Made vulnerable by our human footprint

### A coastline of 11,000 miles

The distance from Chicago to  
Perth, Australia

### Damaged by agricultural and urban practices

### A \$2.5 trillion GDP (gross domestic product)

The world's 6th largest economy

### 96% Water, Forests & Farms 4% Urban

A growing region of vast  
unrealized potential

### Plundered by 180+ invasive aquatic species

### North America's richest complex of innovation strengths

Universities, research &  
development laboratories and talent

### Threatened by carbon- combustion energy and transportation

### Lacking shared holistic strategies to guide our Great Basin

## The Great Basin Century Challenge

**What if we ignored boundaries and acted as one people?**

**What if we designed a 100-year plan to restore, repair  
and ensure the health and prosperity of our Great Basin?**

**What if our commitment to a clean environment  
reinvigorated our cities and our economy?**

**We must think and act with a shared vision  
to get in balance with our ecosystems.**



**OUR VISION**

# **A Park Shared Between Nations**

**DEFINED BY OUR WATERS**

**What if we imagined the entire Great Basin as an international park where we live, work and play?**

**Our Great Basin is a global megalopolis of 51 million people, with tens of millions more expected in this century.**

**Together we must restore native landscapes and habitats, farm more responsibly, green our cities and clean our air and water.**

**By changing how we plan, build and behave, how we get around, grow our food, generate our energy and design our communities, we will have a prosperous future and welcome the world to our lived-in park.**

## **Re-envisioning parks**

**“The new Park Service plan must evaluate the potential for new kinds of national parks, including ‘lived in’ landscapes and cityscapes, ecological restoration areas, and corridors of conservation.”**

**U.S. National Parks Second Century  
Commission Report**

## OUR STRATEGY

# Bold Ideas for the Great Basin Park

## A GLOBAL MODEL

Bring your ideas to these pieces of the vision

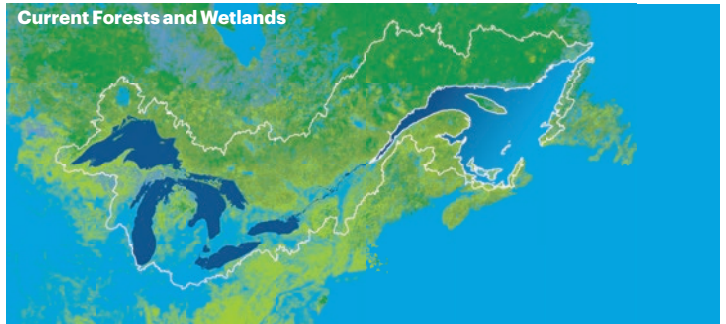
### Ecology

#### Repairing our earth

What if we restored the forests, wetlands, and prairies in the Basin? We would have healthy air, water and soils.

Our Great Basin is a watershed of diverse, globally-important and interdependent ecosystems. Protecting our natural areas ensures their abundant plant and wildlife — and our ability to prosper in balance with nature.

Current Forests and Wetlands



### Cities

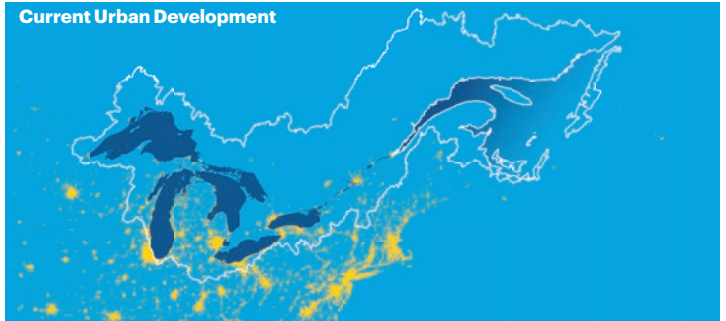
#### Urbanizing our regions

What if we realized population growth and redirected it back into our cities? We would reinvest in quality urban life and minimize humanity's footprint.

Redeveloping dense urban centers is the best use of resources both environmentally and fiscally. By revitalizing vacant land within cities, we can also secure prime farmland, forests and wetlands otherwise lost to sprawl

The City of Chicago could accommodate most of its region's projected growth within the city's 38,000 acres of vacant land at the density of its existing compact, walkable neighborhoods.

Current Urban Development



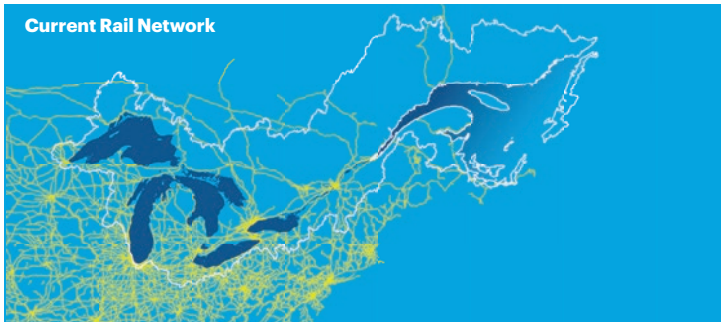
### Transport

#### Renewing our railway heritage

What if we connected our Basin's communities with a diversified, quality transportation network? We would efficiently connect the businesses, residents and visitors of our region by rebuilding our transportation heritage

Imagine a system of high speed rail connecting the Great Basin from Chicago to Toronto. Imagine paddling and bicycling from Duluth to Detroit along designated pathways. Local transit with bike lanes everywhere, ubiquitous electric vehicle support, electrified light rail and pedestrian-friendly rights of way would provide quality urban travel. These 21st century mobility strategies can catalyze economic growth by connecting its brightest minds.

Current Rail Network



## OUR STRATEGY

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### Energy Accessing our clean energy

What if we eliminated fossil fuels and took full advantage of our clean resources forever? [The Great Basin would meet its own energy needs and revolutionize everything we do.](#)

There is enough renewable clean power in the Great Basin if we harness it. Our current energy systems are fueled by cheap resources that do not take into account the costs of their health and environmental consequences.

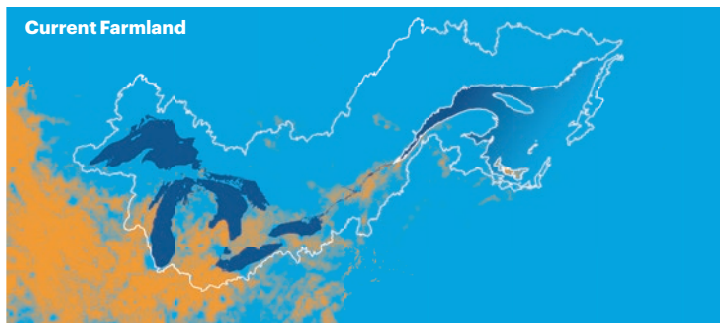


### Agriculture Growing food in the 21st century

What if we reinvented our regional agriculture practices to stop causing harm? [We would help protect our waterways and develop a local economy around growing healthy food.](#)

Our native ecosystems teach us the most efficient ways to build productive, nutrient-rich soils that will accumulate value, not degrade. Food will be grown closer to and within city centers. Nutrient-rich local food can be ours without fertilizer and pesticide hurting our land and water.

Future agriculture will look and function more like the native ecosystems it replaced. Farm fields will be diverse perennial grains and legumes that will continue to grow after harvest as the prairie does.



### Basin Integrity Designing our future holistically

Our collective efforts to design 21st century cities will integrate our human footprint with the natural environment. We will repair ecological damage, transform energy production and agriculture practices, and concentrate population growth in transit-served core cities of compact, walkable neighborhoods. That is how we can achieve a sustainable park environment that restores the Great Basin's natural integrity.



## OUR ACTIONS

# What can Basin cities learn from each other?

## A BETTER QUALITY OF LIFE

### 1. Duluth: Connecting with water

The Great Lakes Aquarium seeks to strengthen residents' connection to Lake Superior and beyond. This freshwater aquarium features Great Lakes animals and habitats, and is part of a science center and aquarium educational movement that connects communities to their watersheds.

### 2. Minnesota: Restoring wetland farming

Native wild rice — manoomin — is again being harvested in Ogechi Lake because of a restoration agreement between the state of Minnesota and the Mille Lacs Band of the Ojibwe nation. Wild rice production declined in the 1950s due to a new dam that raised the lake's water level by more than three feet — drowning out the rice-growing shoreline.

### 3. Great Lakes Region: Stopping invasive species

Modernizing the Port of Chicago, where the Mississippi watershed connects to the Great Basin, can create an infrastructure that reduces the risk of introducing additional invasive species. Many of the 180+ non-native species have been introduced by shipping through the Mississippi-feeding Illinois Waterway and the St. Lawrence Seaway connection to the Atlantic Ocean.

### 4. Salina, Kansas: Transforming agriculture

The Land Institute is transforming agriculture by developing farming systems that capture or embody the ecological features that make native ecosystems resilient and productive. Agriculture of the future will not require fossil-fuel fertilizers that harm our watershed to remain productive... just sunlight.

### 5. Great Lakes Basin Cities: Farming in cities

Vertical and rooftop farms in Chicago, community farms in Cleveland, aquaponics in Milwaukee, neighborhood gardens in Montréal, and an agricultural greenbelt outside of Toronto make the Great Basin a leading region for sustainable urban agriculture.

### 6. Milwaukee: Establishing freshwater studies

University of Wisconsin-Milwaukee's School of Freshwater Sciences is North America's first graduate school dedicated to learning about water in order to protect it regionally and to make clean fresh water more accessible worldwide. The School offers classes in freshwater system dynamics, human and ecosystem health, freshwater technology and economics.

### 7. Chicago: Returning water to the Lake

The 600-acre Lakeside Development on Chicago's south side lakefront is the largest brownfield (former industrial site) in America, the former US Steel South Works plant. Lakeside is on track to become a 21st century mixed-use community that captures 100% of its storm water, cleans it naturally and filters it back into the Lake.

### 8. Chicago: Closing coal power plants

Chicago has closed two coal-fired power plants in dense urban neighborhoods that were the city's largest sources of particulate-forming air pollution. Their closure will improve air quality and human health in the Chicago area and reduce airborne mercury pollution in Lake Michigan.

### 9. Chicago: Restoring watershed divides

The ecological integrity of watersheds is compromised by manmade canals and sewers that open watersheds to non-native species. Proposals for closing the Chicago River system canals are a step toward restoring Great Basin integrity.

### 10. Grand Rapids: Restoring the Rapids

The Grand Rapids Whitewater Project aims to restore the city's namesake rapids. An important objective of the project is the restoration of the historic lake sturgeon spawning habitat in downtown Grand Rapids.

### 11. Detroit: Redeveloping the urban core

Leading what has been called one of the "most ambitious privately financed urban reclamation projects in American history," a visionary entrepreneur is catalyzing downtown Detroit revitalization with a \$1 billion investment in 3 million square feet of commercial space that has attracted 80 startup companies and 7,600 new jobs to downtown.

### 12. Cleveland: Building the first off-shore wind farm

Seven miles off the shore of Cleveland, the Lake Erie Energy Development Corporation is building the Great Lakes' first off-shore wind project. This demonstration project may generate 1,000 MW of wind energy by 2020 and catalyze other such projects.

### 13. Cleveland: Promoting ecological cities

Serving as the sustainability center of The Cleveland Museum of Natural History, the GreenCityBlueLake Institute promotes the development of ecological cities where people can live healthy lives with reduced environmental footprints.

### 14. Hamilton: Celebrating local food for 175 years

At the extreme western end of Lake Ontario, the 500,000-population Southern Ontario city has been enhancing its urban quality of life with local fruits and vegetables from the region since 1837. Operating four days a week in a permanent enclosed facility, the market has 176 stands and 80 stallholders.

### 15. Toronto: Cooling downtown with lake water

The Enwave Energy Corporation's Deep Lake Water Cooling System uses cold water from Lake Ontario to cool buildings throughout downtown Toronto. It is North America's largest lake-source system, and is powerful enough to cool 100 office buildings (3 million square meters of space).

### 16. Ajax: Creating laws for climate change

Located in one of the fastest growing parts of Ontario, the town of Ajax has formally adopted approaches to address significant climate-related impacts, including changing weather patterns, more intense winds, loss of wildlife and aquatic habitats, shorter winters and an increase in invasive species.

### 17. Sudbury: Working with First Nations

The Wahnapiitae First Nation is working with local mining companies to monitor water quality in the Lake Wahnapiitae watershed. The Wahnapiitae have also established a Lake Stewardship initiative whose principles are a model for the Basin.

### 18. Canada: Building green

Canada is emerging as a world leader in manufacturing cross-laminated timbers, the most carbon neutral building material. Construction trends point to taller buildings with structural elements made of carbon-sequestering timber.

### 19. Ontario: Containing sprawl

The Ontario Greenbelt is a permanently protected area of green space, farmland, forests, wetlands and watersheds. It surrounds a significant portion of Canada's most populated and fastest-growing area. The 1.8-million-acre greenbelt system supports 7,000 farms and annually generates more than \$5.4 billion in agricultural activity.

### 20. Montréal: Protecting urban habitats

Montréal is committed to protecting its biodiversity and wildlife and is taking steps to increase their presence in its parks and green spaces. The city is a member of the Advisory Committee on Cities and Biodiversity, an organization that shares ideas and practices for protecting urban plant and animal life.

### 21. Québec's Route Verte: Powering tourism

The 5,000-kilometer Route Verte is the largest cycling network in the Americas, and it crisscrosses every region of the Province of Québec. The Route Verte is a cyclist's paradise that offers residents and tourists an alternative means of inter-urban travel and showcases the province's natural and cultural heritage.

### 22. Québec City/Lévis: Focusing on the river

Situated on opposing banks of the St. Lawrence River, the Promenade Samuel-de Champlain (Québec City) and the Parours des Anses (Lévis) are bringing the river back into the daily lives of residents through riverside biking, walking, and running paths and inviting public spaces.

### 23. Summerside: Pioneering renewable energy

With 27% of its energy from wind, the city of Summerside on Prince Edward Island is demonstrating the transition to renewable energy. At high-wind times wind power generates 100% of the city's energy. City residents have saved \$1,000 per year in energy costs and reduced their greenhouse gas emissions by 47%.

## OUR ACTIONS

# What can Basin cities learn from each other?

## A BETTER QUALITY OF LIFE

### How do we design a better quality of life?

#### Cities

##### A celebration of urban life

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Redesigning our cities for people

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Embracing the Great Basin waterfronts with ribbons of culture and open space

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Restoring native landscapes and easy access to nature

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Directing regional growth into our core cities

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Creating strong mixed-use neighborhoods

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Incorporating natural shading and cooling

#### Buildings

##### More efficient systems

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Capturing rain and reusing water

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Designing zero-carbon buildings

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Reinventing lighting technology

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Developing more energy-efficient appliances

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Inventing responsive building skins

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Defining a new-materials economy

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Managing building clusters within district utilities

#### Transportation Systems

##### Next-generation mobility

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Offering clean, efficient and electrified transportation

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Ensuring our streets are accessible by many modes of transit

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Treating walking and bicycling as serious options

#### Energy Systems

##### Clean, green and renewable

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Shifting from coal to renewables

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Turning to the wind, sun and geothermal

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Developing plant-based fuels

#### Water Systems

##### Supportive of our ecosystem

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Returning naturally cleaned rain water to the Lakes, River and Gulf

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Filtering and reusing urban water

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Replenishing the natural water table

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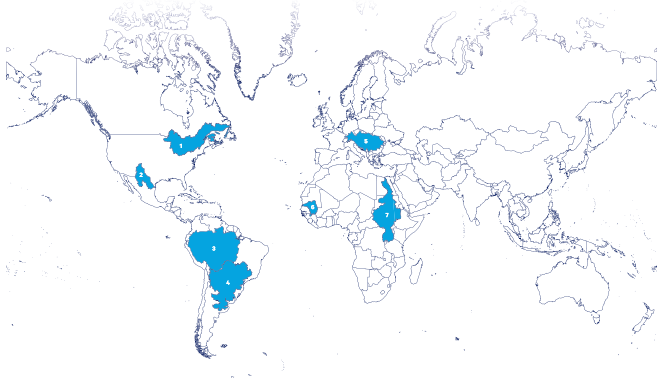
Recycling water perpetually

**“Never doubt that a small group of concerned citizens can change the world. Indeed, it is the only thing that ever has.”**

**Margaret Mead**

# Nations coming together

**With today's challenges, it is critical for countries to come together around fresh water.**



## 1 Great Lakes-St. Lawrence River Compact

The Great Lakes-St. Lawrence River Basin Water Resources Compact is a formal agreement to protect against the diversion of Great Lakes water outside of the Basin and to establish responsible water-use standards. It has been ratified by all the Great Basin's Provinces and States.

## 2 Rio Grande/Río Bravo Basin

The Rio Grande/Río Bravo Basin straddles the border between the United States and Mexico, with each nation having a different name for the river. Since the Water Treaty of 1944, the International Border Water Commission has been the water authority in this basin, involving four Mexican states and three American states.

## 3 Amazon Cooperation Treaty

Brazil, Colombia, Ecuador, Peru, Bolivia, Venezuela, Guyana and Suriname have established the Amazon Cooperation Treaty Organization to protect the 7,100-kilometer Amazon River Basin that covers more than 40% of South America and holds 56% of the world's oxygen-producing broad-leaf forests.

## 4 Río de la Plata Basin Treaty

The Río de la Plata agreement created a framework among Argentina, Bolivia, Brazil, Paraguay and Uruguay for resolving disputes within their shared watershed on issues such as deforestation, hydropower and irrigation.

## 5 Danube River Protection Convention

The Convention commits the European Union and 11 countries in the Danube River basin to sustainable water management, including conservation of surface and ground water, pollution reduction, and the prevention and control of floods, accidents and ice hazards.

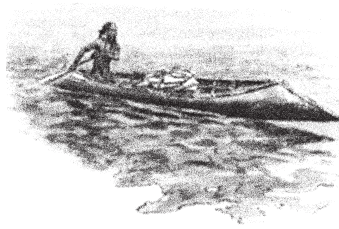
## 6 Senegal River Basin Development Authority

Guinea, Mali, Mauritania and Senegal have created the Authority to jointly manage the 1,800-kilometer Senegal River. Involving citizen participation in decision making, the initiative promotes food self-sufficiency, income growth and ecosystem preservation.

## 7 Nile Basin Initiative

Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Burundi, Rwanda and the Democratic Republic of Congo have signed an agreement to promote regional peace and security by cooperatively developing the 6,700-kilometer river basin for the socio-economic benefit of its 238 million people.

# We are all connected



## Yesterday This water defined life

**For thousands of years, the environment defined the First Nations' way of life. They lived and prospered in an intimate relationship with the Great Basin.**

**They understood humanity's union with nature.**



## Today This water is divided

**Over the past four hundred years, we have shifted from natural boundaries to 15,000 administrative divisions. As a result, we have lost our connection to the ecosystem and fragmented our environment.**

**No one has holistic responsibility for our water.**



## Tomorrow This water is life

**Now we must rally around our shared watershed as an asset and design a holistic future. The earth's resources are limited, and ultimately we must take responsibility for our ecosystem.**

**We are all connected by this water.**



# Our Economy

**\$26 billion investment**  
**\$50 billion benefit**

## Environmental Assets

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The asset of the Great Basin is its environment. Spending the estimated \$26 billion needed for ecosystem repair and restoration will return a \$50 billion increase in regional gross domestic product, according to the Brookings Institution.

## Healthy Cities

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A more prosperous watershed will be realized through Great Basin population growth of at least 26 million (50%) in the 21st century. This city-based growth will expand regional economic activity, employment and tax bases that can contribute to smarter infrastructure.

## High Speed Change

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High speed rail will connect North America's cities and their rich complex of innovation strengths — the Great Basin's research universities, public and private research & development labs, international corporations and human capital. This will activate a powerful knowledge economy with global reach.

# Connect to Your Watershed



## What is the Blue Passport?

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Just as your National Passport connects you to your country, the Blue Passport connects you to your watershed. And everyone lives in a watershed basin. Both kinds of “citizenship” carry rights and responsibilities.

The right to easy access to drinkable, clean fresh water is one that nearly a billion people do not have. That is expected to get worse, unless we exercise our “water citizenship” by doing something meaningful about water protection, use, conservation and management.

## Why carry a Blue Passport?

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To confirm your status as a truly responsible “Basiner.”

To show that identities are defined by more than administrative and national boundaries.

To live the privileged role of an active “water citizen.”

To work together and ensure that our shared watershed basin is properly managed to benefit upstream and downstream neighbors alike.

## To get your Blue Passport

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Visit [www.sie-isw.org/en/blue-passport](http://www.sie-isw.org/en/blue-passport)