A WATER PLAN

Little Sip

Big Gulp

FOR ALL OF CALIFORNIA

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LETTER FROM CONGRESSMAN JOHN GARAMENDI

Dear Friends,

Last year California voters sent a clear message with the passage of Proposition 1 signaling the need for an "all of the above" strategy that will address the State's current and future water supply issues. The California WaterFix does not take this approach. Instead of finding a solution that protects the Delta and water rights in the Sacramento Valley, the California WaterFix and its two massive tunnels will cost us over $15 billion and not create a single drop of new water.

Enclosed is a plan that I have developed called the "**Little Sip, Big Gulp**" solution. It focuses on creating new water through recycling and conservation, the creation of new surface and aquifer storage, and fixing the Delta, while preserving its unique assets, and protecting water rights, all through a science-driven process.

Together, we can solve California's water needs and ensure that water infrastructure projects do not benefit one region at the cost of another– but not with the WaterFix.

Please take a moment to review this plan. I encourage you to discuss the ideas I have put forward and consider supporting this plan as a solution to our water woes. I welcome your comments and ask that you send them to me in my Washington D.C. office, located at: 2438 Rayburn HOB, Washington, D.C. 20515.

John Garamendi
Member of Congress, CA-03

A WATER PLAN FOR ALL CALIFORNIA

REP. JOHN GARAMENDI
OCTOBER 30, 2015

SIX BUILDING BLOCKS FOR CALIFORNIA'S WATER FUTURE

If California is to create a more reliable and environmentally sensitive water supply it must adopt a comprehensive approach. There are six specific actions to provide a foundation for California's water future.

1) Use a science driven process,
2) Water conservation,
3) Recycling and desalination
4) The creation of new surface and aquifer storage systems,
5) Fix the Delta - right sized conveyance, levee improvements, and habitat restoration,
6) Protection of existing water rights

LET SCIENCE DRIVE THE PROCESS

The California Water Fix and any other proposal must be based on, and driven by, quality science that measures and informs decisions. California law requires that the Delta's aquatic and terrestrial ecosystems be protected. We must do so, not just because the laws demand it, but because our status as human beings on this planet demands that we pay attention and protect precious and rare ecosystems.

" In assessing the environmental impact of any project, concern is usually shown for its effects on soil, water and air, yet few careful studies are made of its impact on biodiversity, as if the loss of species or animals and plant groups were of little importance."

– Pope Francis

Go forward carefully. Start with the least destructive option. Use science to evaluate each step starting with conservation, recycling, and surface and underground aquifer storage systems, fixing the Delta levees, and then and only then, if necessary proceed to a conveyance facility through the Delta. Remember that the Delta is a unique and precious environmental resource. We must let science govern.

CONSERVATION

The quickest and cheapest source of new water is to stretch our current supplies by conserving what we have. Californians have been at this for years in our cities, in our industries, on our farm, and in our homes. Statewide conservation efforts this summer alone have saved 611,566 acre feet of water proving the potential of this largest source of readily available new water.

All of us should do a lot more water conservation, not just the agriculture community. The water conservation mandate set by the state is a 20 percent reduction per capita by 2020 which equals 2 million acre feet. In a very real way conservation can create new water that was not previously available for use. To be on the conservative side, let us assume that just one half of the State's goal could be obtained in the next decade, thereby adding 1 million acre feet of new water to our supplies each year.

"In a very real way conservation can create new water"

WATER RECYCLING

Can you name the fifth largest river on the west coast of the Western Hemisphere? It's the water that flows out of the sanitation plants in California and is dumped into the Pacific Ocean.

Why would any sane government take water from the Sacramento River, pump it 500 miles south, lift it 2,000 feet in the air, clean it, use it once, then clean it again to a higher standard than the day it arrived in Southern California, then dump it in the ocean? California does just this as it discharges vast quantities of water to the ocean each year, much of which could be reused.

> "Why would any sane government take water from the Sacramento River, pump it 500 miles south, lift it 2,000 feet in the air, clean it, use it once, then clean it again to a higher standard ... then dump it in the ocean?"

We need to think seriously about recycling, not just in Southern California, but everywhere. The State of California currently recycles approximately 669,000 acre feet of municipal water each year and has set a water recycling goal of 1.5 million acre feet of new water in California by 2020, and 2.5 million acre feet by 2030.

Another option is desalination of the ocean water. This is feasible and used throughout the world, however it is not a viable option for all communities. It costs about 36 to 60 percent more to desalinate sea water than to recycle urban wastewater using current technologies. However, technological advances are being pursued for both recycling and desalination that could lower the costs of each.

Conservation and recycling in California can create approximately 2.9 million acre feet of new water to use each year, and that can increase to 3.4 million acre feet by 2030. This is new water that is not available today because it is wasted or pumped out to sea. Since much of this new water is created south of the Delta, there is a direct reduction on the demand for water from the Delta. Conservation and recycling are steps one and two in a **comprehensive water program** for California.

WATER STORAGE

Water storage south of the Delta is possible and necessary. The combined capacity of the great Delta pumps near Tracy is 15,000 cubic feet per second. They do not operate year round, only when there is sufficient water in the Delta, when threatened fish are not near the pumps, and when there is agricultural and urban demand south of the Tracy pumps. Currently, there is very limited water storage capacity south of the Delta. We must build more. San Luis and Los Vaqueros reservoirs should be expanded. New dams could be built at Los Banos Grandes, and numerous smaller off stream sites throughout the San Joaquin Valley. There are many aquifers throughout the San Joaquin Valley that may prove suitable to store additional water that would be used in a conjunctive use water management system. With these water storage facilities in place, the need for havoc causing excessive pumping in the Delta could be avoided.

"Surface and underground storage should be used in a conjunctive use water management system"

When coupled with recycling, the underground aquifers in Southern California are another key to our water future. The underground aquifers of the South Coast Hydrologic Region in Southern California have a combined capacity larger than Lake Shasta. Today Orange County Water District and the Chino Basin agency recycle water and put into the underground water basins to be stored for those inevitably dry years and to protect the quality of the aquifer. When needed, it is pumped out, used, cleaned and returned to storage. Statewide, this recycling system could create as much as 2.5 million acre feet of new water, and thereby reduce the need for importing Colorado and Sacramento River water. We applaud the recent decision by Metropolitan Water District to build a new recycling program in its district and encourage other water districts to pursue expanding the capacity of the state's water recycling system.

Surface and underground storage should be used in a conjunctive use water management program. Use the rivers when there is lots of water and use the reservoirs when there is little. Water storage north of the Delta is also important, and three proposals are on the books today. An off stream reservoir at Sites, located west of Williams in Colusa County, has great promise for storage and for creating greater flexibility in managing the Sacramento River for salmon runs, wildlife refuges, water demand, and Delta outflow. This reservoir can deliver 500,000 acre feet of annual yield and the additional flexibility that it offers can under some scenarios, save another 500,000 acre feet of water that would otherwise be released into the river systems. Raising Shasta Dam is also possible, as is better conjunctive management of the many aquifers in the Sacramento and San Joaquin Valley. State and federal agencies have already commenced studies for these projects. A quick completion of these studies and construction of those that are feasible is essential.

FIX THE DELTA

No sane homeowner would go fifty years without maintaining their plumbing system. For more than fifty years, the Bureau of Reclamation and the California Department of Water Resources have used the Delta levees as a plumbing system to deliver water from the Sacramento River to the Tracy pumps. Yet, they have spent virtually no money maintaining these critical levees, the failure of which could shut down water deliveries for an extended period. The Federal and State agencies have relied upon the local reclamation districts, the general fund and state bonds to do the repairs, literally giving the exporters a free ride. When a levee does give way and an island is flooded, it is the local agency and federal and state governments that foot the bill to repair the levees, often at a much greater cost than would have been necessary with basic maintenance.

> "It's time for everyone who benefits from the Delta levees to pay to maintain them"

The Delta Plan includes a recommendation to have those who benefit from the Delta levees pay their fair share, but legislation is necessary to implement this recommendation. For years, Federal and State water contractors have depended upon these levees for the delivery of water to their fields and cities without paying to maintain them. It's time for everyone who benefits from the Delta levees to pay to maintain them.

THE LITTLE SIP, BIG GULP SOLUTION: AN OVERVIEW

The best way to achieve a long term solution to California's water crisis is an "All of the above strategy" that uses the programs described above (science driven programs of conservation, recycling, desalination, and groundwater and surface storage) and then address the Delta problem with the "**Little Sip, Big Gulp**" solution.

Little Sip

As conservation, recycling, surface and aquifer storage and improvements to the Delta levees come on line, continuous and robust scientific study of the effects of these improvements on the health of the Delta must take place. **If it is determined that the reduced demand on water from the Delta and altered pumping regimes from the Delta are not sufficient to meet the goal of water reliability, then it's time for "Little Sip Facility".**

The "**Little Sip Facility**" is a much smaller facility with a capacity of no more than 3,000 cfs, built to deliver water from the Sacramento River to the Tracy pumps. 40 percent of this Delta-friendly system is already built and begins only two miles from the State Capitol, at the Port of Sacramento. A fish screen and a low head pump at the existing opening on the Sacramento River would allow 3,000 cfs of Sacramento River water to enter the Port of Sacramento Ship Channel and flow 25 miles south to a shipping lock at the southern end of the channel. Then, pumps would deliver the water into two 10-foot diameter, pressurized pipes that would span a mere 12 miles beneath the Sacramento and San Joaquin Rivers and deliver water into a new channel along the east side the Old River channel leading to the Tracy Pumps.

An alternative route could deliver the water from the pressurized pipe to an aqueduct at Brentwood and on to the pumps at Tracy. This route would intersect six vital San Francisco Bay aqueducts, thus creating a safety system for 8 million Bay Area residents.

The "**Little Sip**" described above would be coupled with a "**Big Gulp**" which is drawing water from the existing Delta channels when there are high water flows and no Delta smelt near the Tracy pumps.

Big Gulp

"Fixing the Delta must begin with fixing the Delta levees"

All of the alternatives envisioned in the REIR/SEIS (Alternatives 4A, 2D, 5A) depend on the existing Delta channels to deliver approximately half of the average annual water deliveries of approximately 2.5 million acre feet of water. This is the "**Big Gulp**". Thus, an important part of securing California's water future is improving the integrity of the Delta levees. The levee improvements would increase the security of the water delivery system, and also significantly increase the safety and security of state highways, rail lines, natural gas fields, gas and fuel pipelines, drinking water pipelines, and numerous businesses and towns.

Fixing the Delta must begin with fixing the Delta levees.

"15 years after the CALFED Bay-Delta program set a goal of bringing all Delta levees up to the standards to the U.S. Army Corps of Engineers" PL84-99 program, the levee systems protecting 69 percent of the Delta's land do not meet this standard. Demands for future levee improvements are significant."

- Delta Stewardship Council

Analyses conducted by DWR and the Army Corps of Engineers have shown that seismic activity and subsidence represent threats to earthen levees protecting the Delta. Levee failures would not only inundate Delta islands, but would also cause salt water intrusions disrupting the water supply.

In order to ensure that this "**Big Gulp**" of high-water flows can actually work, the levees must be improved. Specifically the levees for South and North Forks of the Mokelumne River and the sloughs and rivers in the Central and South Delta must be upgraded to ensure greater capacity, reliability and flood safety. Also key levees blocking sea water intrusion into the Delta must be upgraded.

A key component of improving the Delta is a fish screen on the Cross Delta Channel Gates and Georgiana Slough, which are located in Walnut Grove, so that out migrating salmon will not be drawn southward to the pumps. Consideration should be given to the sound and light fish screen concept recently tested on the Georgiana Slough.

LITTLE SIP, BIG GULP
PROPOSED ROUTES

3000 Cubic Feet Second (CFS) Western Route

Existing Ship Channel

Old River Alternative Route

Contra Costa Alternative Route

Port of Sacramento Intake

(PORT OF SACRAMENTO)

Single Shipping Lock

(CALIFORNIA AQUEDUCT)

SACRAMENTO
Port of Sacramento Ship Channel
Freeport
Clarksburg
Hood
RIVER
Courtland
NORTH BAY AQUEDUCT
BARKER SLOUGH PUMPING PLANT
Walnut Grove
Ryde
MOKELUMNE
Thornton
RIVER
FORK
FORK
RIO VISTA
Isleton
NORTH
SOUTH
SACRAMENTO
JOAQUIN
SHERMAN ISLAND
SAN
FRANKS TRACT
PITTSBURG
ANTIOCH
CONTRA COSTA CANAL
MOKELUMNE AQUEDUCT
LOS VAQUEROS PIPELINE
Brentwood
DISCOVERY BAY
OLD
MIDDLE
RIVER
RIVER
STOCKTON
CLIFTON COURT FOREBAY
RIVER
MANTECA
HARVEY O. BANKS DELTA PUMPING PLANT
TRACY PUMPING PLANT
OLD
SOUTH BAY PUMPING PLANT
DELTA-MENDOTA CANAL
CALIFORNIA AQUEDUCT
TRACY
SOUTH BAY AQUEDUCT
HETCH HETCHY AQUEDUCT
Alameda Cr

WATER SUPPLY

With the normal minimum flows in the Sacramento River above 15,000 cfs, a small 3,000 cfs facility could operate at least 300 days per year, delivering approximately two million acre feet of water to the pumps at Tracy and then on to the new and expanded storage facilities in the south (Los Vaqueros, San Luis reservoir, Los Banos Grandes, and the many aquifers in the San Joaquin Valley and south of the Tehachapi's.) Note that the full 9,000 cfs capacity of the tunnels proposed in Alternative 4A of the California Water Fix would only be operational during large storms flows that occur at most a few times each year. Thus these huge tunnels become a massive waste of money for California and California water agencies.

"Thus these huge tunnels become a massive waste of money for California and California water agencies."

This is where the "Little Sip, Big Gulp" strategy comes into play, and why fortification of the Delta levees is so essential. In average and above average water years, there is sufficient water in the Delta to allow the Delta pumps to take a "Big Gulp" of 2.5 million acre feet of water. This amount, together with the two million acre feet delivered through the 3,000 cfs facility, would meet the annual water demand south of the Delta. Rather than spending billions of dollars on a construction project that will rarely operate at its full capacity, we should prioritize the 300+ day reliability of "Little Sip" versus the sporadic operation of the twin tunnels.

By DWR's own analysis in the BDCP Draft EIR/EIS under Alternative 5, a 3,000 cfs facility in the North Delta would result in a net increase in water supply of 345,000 acre feet per year on average, when operated in conjunction with South Delta exports.

FISHERIES AND HABITAT

We must improve delta smelt science around the Tracy pumps. Current studies indicate that the delta smelt follow turbidity and move toward the Tracy pumps during times of high pumping, as storm water flows are pulled through the Delta. Improved monitoring can and should be implemented to determine where the smelt are, so that pumping necessary to achieve the "**Big Gulp**" of 2.5 million acre feet can occur without harming the delta smelt and other endangered species. (Note that this level of pumping is less than one half current annual water pumped from the Delta).

Delta smelt trawl surveys conducted by the California Department of Fish and Wildlife have found smelt in the Port of Sacramento Ship Channel. The construction of a single shipping lock at the southern end of the levees would isolate the Sacramento River water flowing south in the channel from the Delta water and any smelt in the area. Some smelt habitat in the channel would be lost. However mitigation measures such as shallow flooding of low value land in the area could significantly expand delta smelt habitat.

Salmon migration in and out of the Delta is covered in the Alternative 4A studies. One 3,000 cfs fish screen at the Sacramento Ship Channel facility would be much cheaper and environmentally preferable to three (3,000 cfs) fish screens with a total capacity of 9,000 cfs further down the Sacramento River as envisioned in Alternative 4A.

MITIGATION

Mitigation of the effects for the use of the ship channel could be trengthening the west levee of the Port of Sacramento Ship Channel. This would serve the dual purpose of protecting the levees necessary to move water down the channel and protecting West Sacramento from floods caused by high water flows in the Yolo Bypass.

Additional mitigation should include deepening the ship channel to 35 feet, designing the intake fish screen on the Sacramento River in manner that is compatible with development plans of West Sacramento including access roads, river oriented parks, walkways and educational facilities focused on the ecology of the region.

Delays caused by the new shipping lock on the Port of Sacramento Ship Channel could be mitigated by building a new high bridge across the Sacramento River on Highway 12 at Rio Vista, thus eliminating the current impediment to all river and Highway 12 traffic. This high bridge is a subject of a Caltrans study.

Mitigation for the loss of delta smelt and other species habitat in the shipping channel could be accomplished by inundating low value islands near the southern end of the channel thus creating shallow water habitat.

FINANCING

According to a presentation made to the BDCP Steering Committee by Ron Milligan from the United States Bureau of Reclamation on July 2010, a 3,000 cfs conveyance with one intake on the Sacramento River south of Freeport would cost approximately $7 billion dollars. This modeling is based on a 40-mile tunnel along the same alignment as the twin tunnel project. It does not use the Port of Sacramento Ship Channel. The report estimated that SWP-CVP exports would average 6 MAF, with 1.4 MAF from the northern diversion and 4.6 MAF from the southern diversion point. Furthermore, the capital cost for an incrementally increased supply increases dramatically as the size of the conveyance increases—while water would cost $150/acre foot with a 3,000 cfs conveyance, a 15,000 cfs conveyance would cost approximately $210/acre foot under current conditions. Furthermore, a 3,000 cfs conveyance would cost approximately $380 million annually, when considering debt service, O&M, and power costs compared to $540 million for the 9,000 cfs twin tunnels. Note that these figures are based on a very different project than the "**Little Sip**" discussed here.

In a 1997 report, CALFED considered using the Port of Sacramento Ship Channel and found"no major technical problems" in this route, (Alternative 3G). This proposal is similar to the Contra Costa Alternative Route proposed in "**Little Sip, Big Gulp**", except it diverted 5,000 cfs from the river. A 3,000 cfs facility would result in a lower cost. The State identified the need for a low lift pump station on the Sacramento River that would provide the hydraulic head to move water through the channel during periods when gravity flows alone were insufficient. The plan called for a new unscreened pumping plant that would move water into a pressurized pipeline to Brentwood (about the same distance as the pipe line to Old River) where an open canal would convey the water to Clifton Court Forebay and the Tracy pumping plants. This plan demonstrates the potential for the use of the ship channel.

The "**Little Sip, Big Gulp**" solution would require construction of a new intake replacing the existing intake at the Port of Sacramento. A fish screen at the intake, a low head pump to move water during periods of insufficient gravity; a shipping lock at the south end of the channel to facilitate commerce and to prevent Sacramento River water from flowing

into the Delta; an intake and second pump north of the southern end of the eastern levee of the Port of Sacramento Ship Channel; two new 10-foot diameter pressurized pipelines to carry water under the Sacramento and San Joaquin Rivers; and an aqueduct to carry the water to the Tracy pumps along the east side of Old River or to Brentwood then through Contra Costa County to the Tracy Pumps.

USACE estimated the costs of deepening the Port of Sacramento Ship Channel to 35' to be around $168 million, with an annual cost of $8 million and an annual benefit of $24 million.

CALFED estimated a cost of $1.1 billion to $2.2 billion (adjusted for inflation to 2015 dollars) to upgrade the Delta levees, as reported in the Public Policy Institute of California's Armored-Island Aqueduct proposal. Presumably the twin tunnel project and the Little Sip would have the same Delta levee costs, since both rely on continuing to pump water from the Delta when it is available.

The analysis in the original BDCP documents for the 3,000 cfs option, Alternative D, takes water out of the Sacramento River below Freeport and includes a fish screen at the intake. It is reasonable to assume that a similar fish screen at the port of Sacramento would have a similar cost. The CALFED Storage and Conveyance Refinement Team estimated that screening an isolated Delta conveyance facility would cost $22,700 per cfs in 2007. Based on this information, a 3,000 cfs facility today would cost $78,150,000 adjusted for inflation.

An additional mitigation measure could be strengthening the west bank levee of the Port of Sacramento Ship Channel. According to USACE estimates improving the west bank levee of the would cost $202 million.

The discussion above indicates that the "**Little Sip, Big Gulp**" solution would be less expensive than DWR's $7 billion cost estimate for a 3,000 cfs 40-mile tunnel through the entire Delta. Even if we were to accept the DWR price tag the Little Sip Big Gulp solution would be $10 billion less expensive than the $17 billion cost of the 9,000 cfs tunnel in Alternative 4A.

These financial savings could be used for new and expanded storage facilities south of the Delta at Los Vaqueros, San Luis reservoir, Los Banos Grandes, and the many aquifers in the San Joaquin Valley and Los Angeles basin, and north of the Delta at the off stream Sites Reservoir. Savings could also be used for urban and agricultural conservation.

CONCLUSION

Ultimately, construction of a 3,000 cfs conveyance as described in the "**Little Sip, Big Gulp**" proposal with levee improvements and appropriate mitigation, is a much cheaper alternative than the alternatives in the California Water Fix. The State's proposal would also eliminate the economic, historic, cultural, and environmental impact on the North Delta. Armoring the Delta as presented in the "**Little Sip, Big Gulp**", would reduce flood risk in Delta cities and historic communities and also create water supply reliability for Southern California and the San Joaquin Valley.

"the Little Sip, Big Gulp would reduce the flood risk... and also create water supply reliability for Southern California and the San Joaquin Valley"

ABOUT CONGRESSMAN JOHN GARAMENDI

John Garamendi joined the U.S. House of Representatives on November 5, 2009. He brings nearly four decades of public service to the House Armed Services and Transportation & Infrastructure committees, having previously served on the House Agriculture, Natural Resources, and Science & Technology committees. He also previously served as a California State Legislator, Deputy Secretary of the U.S. Department of Interior, Lieutenant Governor, and State Insurance Commissioner. Throughout his career, he has cultivated a unique expertise on water policy.

Garamendi's history with water policy began on his family's cattle ranch in Mokelumne Hill, where he saw firsthand the ways wet and dry years influence California agriculture. When Garamendi and his wife Patti served as Peace Corps Volunteers in Ethiopia, they helped install water sanitation systems, providing a stark reminder that clean and reliable water can transform a community.

As a State Legislator, Garamendi helped lead the fight against the peripheral canal in 1982, and he's helping to lead the fight against the twin tunnels today, as both represent existential threats to the Sacramento-San Joaquin Delta. Legislation Garamendi wrote as a state legislator also helped prevent development that would have forever ruined the pristine nature of Lake Tahoe. Other bills authored by Garamendi established the California Conservation Corps, created the first state alternative energy tax credit in America, and protected Mono Lake.

In 1995, President Bill Clinton appointed Garamendi as Deputy Secretary of the U.S. Department of Interior. John spearheaded efforts to resolve water disputes in California and to protect the Sacramento San Joaquin River Delta. He negotiated the purchase of the Headwaters Forest, coordinated research on global warming, and established habitat conservation plans in California.

In his capacity as California's Lieutenant Governor, Garamendi chaired the powerful California State Lands Commission, where he consistently voted to protect the Pacific coast and stopped what would have been California's first new offshore oil drilling platform in more than four decades.

His comprehensive water plan outlines an “all of the above” strategy for providing California with a reliable water supply. He has also developed an alternative to the twin tunnels which he calls the 'Little Sip, Big Gulp' solution. In Congress today Garamendi is the author of a bipartisan bill with Rep. Doug LaMalfa (R-CA) that would help Sites Reservoir clear federal hurdles. Sites will provide needed off stream water storage capacity, helping to make California's statewide water system more resilient. During negotiations for the recent five year Farm Bill, Garamendi was a key voice on the Agriculture Committee ensuring that California's agricultural needs were met, and the bill included major improvements to support for the specialty crops that dominate much of California's agricultural sector. He also served on the Water Resources Reform and Development Act (WRRDA) Conference Committee between the House and Senate, helping to bring major investments in levees, recycling systems, and other water improvements to California. Garamendi, working with Senator Dianne Feinstein, is also the coauthor of the Delta Heritage Act to preserve legacy Delta communities. Working with Rep. Mike Thompson, Garamendi was also an instrumental voice in the establishment of the Berryessa Snow Mountain National Monument. His first bill in Congress, the West Coast Ocean Protection Act, would stop new offshore oil drilling on the Pacific Coast and has been embraced by every West Coast Senator.

Throughout his career, Garamendi has been focused on the challenges of the climate crisis, the need to proactively ensure we have clean water and air, and the many ways we can ensure that economic growth and environmental sustainability are mutually beneficial goals. Rep. Garamendi has forged a reputation as a visionary, effective leader who can work across the aisle to deliver solutions for California. He possesses the unique wealth of knowledge and experience necessary to tackle today’s complex challenges.

Today, Garamendi and his wife live in the Delta community of Walnut Grove. Still tied to the land, they grow pears and raise cattle. The Garamendis have six children and 12 grandchildren. Garamendi graduated from UC Berkeley and earned an MBA from Harvard University.

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