

POLICY MEMO – TUSHAR NARULA, UC BERKELEY

Tushar Narula

Policy Memo

DATE -11/15/2018

MEMORANDUM FOR STAKEHOLDERS- Susan Lofthus, Chair of Water Committee

SUBJECT – Combating the issues of Water contamination and equity in the city of Stockton, CA with the new development

Summary:

Introduction:

The city of Stockton, as a county seat of the San Joaquin Valley, is located in Central Valley California has been a major agricultural land for years together. Due to its agricultural abundance. With a population of 310,496 in 2017, it comprises 41.6% of San Joaquin County's population of 745,424 people. Stockton's population is incredibly diverse, but also disproportionately faces economic hardship. The city faces a variety of issues such as poverty, crime, water troubles and faltering economic development. The topic chosen for the memo is one of the major threats and insecurities of the people of Stockton. The Groundwater/Water pollution in the firm agricultural land causes a variety of issues including equity, long term sustainability and security for the businesses and the citizens living around the area the lack of access to clean and safe water to the citizens causes various inequality issues and violates the newly codified Human Right to Water.(HRTW) The drinking water contaminated by the industrial by-products causes many low income communities to suffer.(UC Davis, 8) DUC residents are people of color who face the cumulative impacts from environmental contamination. **The planning documents chosen for the assessment include the General Plan, Envision Stockton, Zoning Map, Water quality reports, Water Rate Study Report, USGS Groundwater Quality, Urban water management plan, Groundwater management plan,**

water rate study report, Eastern SJ groundwater basin management plan and private company reports such as Hydroviv. As the resident's concerns and complaints regarding the situation increases, the pungent odor, sewer like water supplied to the people of Stockton create a high speculation around the authorities, environmental justice and the sustainability of the core functioning parts of the city. The water quality, quantity provided to the citizens represent the governmental mismanagement and environmental racism as the people most effected by the city government's mistakes in the issue are predominantly poor people of color who have limited power to change policies. (Iyer,2016) While Stockton's economy heavily relies on the efficient use of the source, the abusive addition of chloramines has corroded the city's lead and copper pipes and brought health hazards such as cancer and other digestive issues. The governmental negligence is also a part of the issue and broadens to sustainability in the system as there were implementation of water rate hikes. The recent Waterfix/water transfer plan is also turning out to be very expensive and non-feasible and has gotten many stakeholders worried about the situation of the area. (Elliot, 1)

Evaluation:

The general plan of 2040 Stockton as a planning document provides a great insight into the vision for the future and how Stockton tries to incorporate smart growth strategies to tackle the problem of water quality and pollution and the effects it has created with a list of technical as well as social interventions seen through the documents. The first positive seen in the plan is the smart growth strategy of high intensity mixed uses. The plans inclusion of open space and agriculture in the heart of the waterfront and other popular areas would promote the awareness of the water quality and its importance which is extremely crucial for the future. The

open space and agricultural land included would also promote equity and sustainability through all the members of community, regardless of their race and status, would work towards and care about resources such as water through awareness and activities such as community gardening. The Map 1 below also provides an insight also provides designation of water treatment facilities and agricultural land and it provides a beneficial foresight. The protection of fishes and agricultural land in LU-5.2 and the analysis of dams attempts to provide cleaner measures to protect water. The policy of increased protection of water quality by collection, treatment and safe disposal of wastewater provides a good ethic towards the wastewater management plans of Stockton. The new LID approach in the SAF-3.2B also provides some great measures including Hydro-modification, reduction of trash and most importantly, public education and outreach. The amendment would cover majority of technical and social issues accounting to the cumulative water issues in Stockton which seem to be interconnected to one another. The application of the amendment on the new buildings would also ensure the functioning of a smarter community. Travis Small, MUD in his conversation also mentions the equal amount and quality in the distribution of water around the Stockton area and assures it with the CCR reports. The updated pipes and up to date systems and networks with regular checking also make it far away from the situation of Flint. Current tours in high schools also contribute towards the awareness situation. The chloramine conversion project as a part of the water rate study report measures by the city of Stockton looks at the core of the problem. The counteractive measure of the usage of mosquitofish to help control the Skeeter population can also be counted as a positive measure by the government. The Urban Water Management Plan and the groundwater management plan provide other sources of sustainable activities. The

Sustainable groundwater management act as a policy measure. Groundwater sustainable agencies and groundwater sustainable plans are a part of the act and prevent the critical overdraft. The development of the surface water supply and the DWSP intake facility from the San Joaquin River is also an important positive/ strength to acknowledge as it brings about a change in the long- term reliability of water supply from the Delta for the existing as well as the future customers. The contingency plans and the incorporated emergency supplies look towards sustainability as well as safety. The development plans also revolve around different prevention measures regarding policy as well as actions such as reducing allocations to SEWD and CSJWCD. The Delta Water Treatment Plant also provides a new supplemental, high quality water supply for the Stockton Metropolitan Area. The MGD replaces the declining surface water sources and protects the groundwater supplies for the current and future needs. Equity incorporation in the area can also be included by the involvement of organizations such as the Water Education Organization with facilities such as Aquafonia and Aquapedia that increase the knowledge and help all the underdeveloped communities to know about their rights. A great way of sustainability incorporation during the improvement plan was the LEED Gold certification for the energy use, lighting, material use and most importantly water by the U.S. Green Building Council. A policy based approach positive is found in the Urban Water Management Plan laid by the Stockton city as 5.2.3.2 discusses the sustainable water management act which requires groundwater management at the groundwater basins and includes the development of groundwater plans in the future. The Table 1 would highlight the tertiary level of treatment which is the final and best treatment that can be provided to wastewater.

The negatives of the Stockton area are dense, the housing conditions, contaminated water, air pollution, high crime activity has caused people to protest and leave the undesirable area.

(Pierce, Bakersfield) The basic necessities required for people to survive were often compromised by the city as people pay for the contaminated water and the bottled water at the times of emergency where the government is not around to help. The Eastern San Joaquin groundwater basin management plan with the south delta experienced periods of degraded water quality and the confluence of the Stanislaus river. The rain, snow melt runoff, irrigation return flows are some of the reasons other than the chloramines that act as a hindrance for the water quality. Near east of Stockton, the regional flow reaches the conical depression/low point as shown in Map 2 according to the water data library. The amount of water from natural and human activities that reach the groundwater table is deep percolation and the levels of deep percolation are predicted to increase drastically in the coming years so the population awareness and citizen responsibility with the government negligence has acted negatively for the city. This has resulted in the reduced growth of all the different color and low-income communities that are around the areas to face unequal treatment and denial of freshwater that can be counted as a human right. The promotion of the Waterfront as a hub for the regional commerce and high-quality housing would encourage the disposal of the development and industrial waste as mentioned in the general plan according to Policy LU-2.1. There isn't any mention of Job creation in the sustainability section and the management of the water plans. The continuation to cooperate with the San Joaquin county, Stockton east Water District and CalWater to monitor the groundwater withdrawals according to the Action SAF-3.2A stagnates the procedure and promotes the use of chloramines which have harmed the population and

the equitable access of clean water. The water transfer plan has also demoted the equal access of fresh water in the area by the agricultural industry, which needs it the most and ballooned the cost of the process up till 20 billion dollars. The rejection of fisheries and neglecting the nurturing of wildlife in the process reduces the sustainability portion of the project. (Elliot,1)

The unreasonable increase in river water flow would lead to many irreversible impacts to the Stockton region. Where there is an urgent need of the balance between the water life and residents is hard, the dismantling of water rights of the region is an unjustifiable attack on the low- income communities and their way of life. The main region of agriculture also leads to many jobs and households in the area that solely depend upon the fresh water as a source of their livelihood and it is compromised regularly. So, the people belonging to the agricultural community and their families also take a hit. The Water reports by other organizations such as Hydroviv indicated the presence of metals such as Arsenic, Chromium 6 and disinfection byproducts that can cause issues such as bladder cancer and puts environmental justice of the communities at stake.

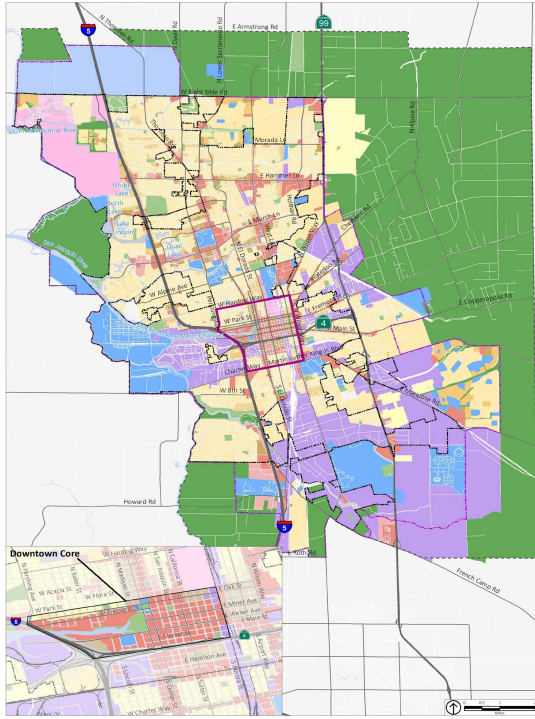
It is observed in the Stockton general plan that there are many issues that are attempting to be covered. Through the analysis of Campbell's planner's triangle, one can observe the possibilities of conflicts arising. The development in the waterfront area and the encouragement of social and economic hubs around the other parts of the city indicate focus on the economic development. The commercial development in many of the areas around the main attractions may cause a big issue to the other parts of the triangle. The resource conflict that arises while focusing on environmental protection is the lack of sustainability and water resource protection with a lack in sustainable water/ waste management techniques. The high- density housing and

commercial development would, in some ways, neglect the environmental protection required in the area. Where the plan attempts to look at redevelopment and new projects to focus on environmental protection and natural area preservation, it works well from area to area and not the whole city, the fish health is also mentioned but the monitoring would require external management. Regardless the situation, the dual focus would cause a situation would lead towards the gradual depletion of resources. The representation of disadvantaged communities showcases the acknowledgement of the equity issues in the area. The red mark around the waterfront area represents the high number of disadvantaged communities residing in the area and the high-density development plan would hint towards gentrification and unfair treatment as the property conflict would rise between their incentive of economic growth and equitable access of all resources in the high-end development housing and the commercially profitable social hub. The development conflict is created in the area, especially in link to water, as there are resource dependent communities present in the area and contaminated water is provided in their area. As according to KCRA reports of August 7,2018 and other public media platforms, there was discoloration, pungent smell and particles floating in the water supplied in the city of Stockton. With policies such as CH-2.3 as mentioned in their plan, Stockton does attempt to target the 3 core aspects of the planner's triangle with a focus on reducing the compounded environmental impacts on the disadvantaged communities. As the planner's triangle provides a social view of nature and contributes towards the resources that need to be taken care of as all the 3 points work in relationship with each other. (Campbell,5) Where Stockton's plans provide a holistic target of working on all platforms, they have an incline towards economic development and environmental protection and lack in combating some equity issues in the

area due to the less policies. It attempts to resolve the planner's triangle by targeting all parts of it but does not focus on equity as much as it needs to. Where commercialization and environment are important, the topics of equity, education of resources and better functioning of the existing resources play a crucial role in the development of the undermined communities and also for their desired community to work.

The living conditions of many of the disadvantaged communities lack the basic infrastructure, clean drinking water, storm drainage and sewer service according to the SB244 analysis in the general plan. The poor, unincorporated, non-white communities have always been struggling with issues such as lack of appropriate water infrastructure and contaminated supplies for decades and this has laid layers of inequality and disparity. (Bliss, MotherJones) There are around 525 densely populated poor communities around the city area according to the California non-profit policy link. The designation of median household income in the general plan was helpful in observing a slight increase as shown in figure 1 and the positivity is misleading as the communities of color do complain regarding the lack of clean water and other basic services even after paying their taxes which heats the fact of environmental racism. It is the issue of water combined with the struggle of other basic resources that lead to the high crime rates and unsafe environment around. Affording the basic services comes as a challenge for the low-income communities that they struggle to survive. Where CalWater attempts to temporarily solve the issue by attending to complaints and providing bottled water, it doesn't lead to a path of a long-term solution that serves the environment as well as the people of Stockton. So, through the documents and the analysis above it is seen how the negligence and

the other platforms such as governance, pure focus on monetary development and lack of basic support leads to the equity issues in the Stockton area.



Map 1: Designation of water treatment facilities (Red)

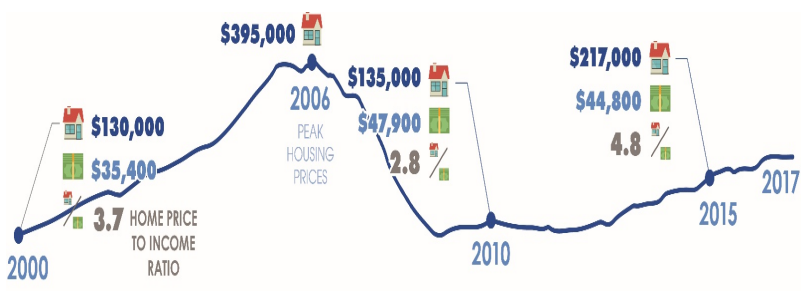
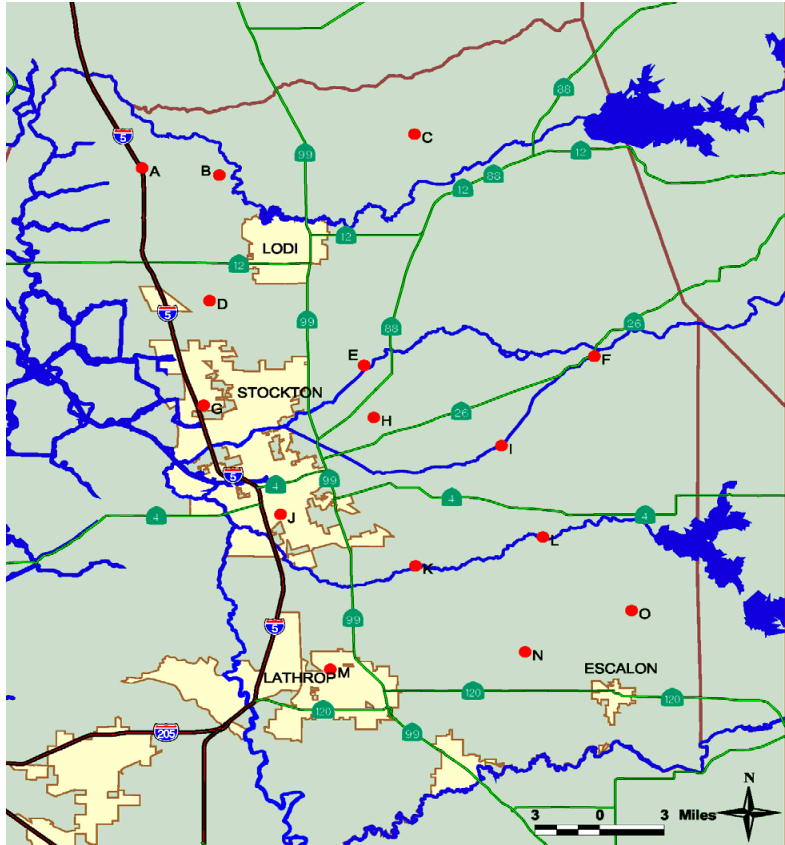
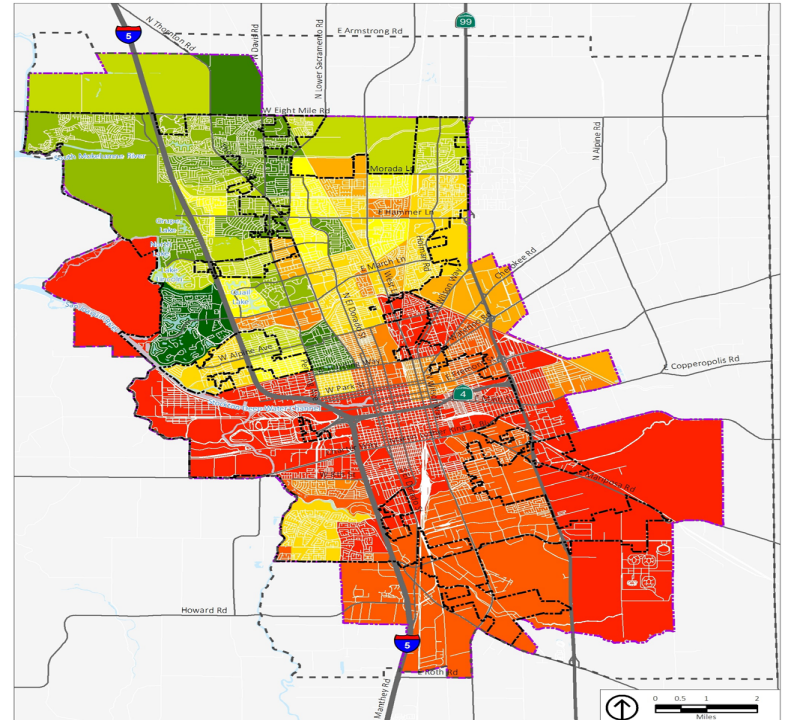


Figure 1: Median House Income



Map 2: Regional Water Flow Data



Source: California Office of Environmental Health Hazard Assessment, 2017; PlaceWorks, 2017.

Percent of Disadvantaged Communities

46-50%	61-65%	81-85%
51-55%	66-70%	86-90%
56-60%	71-75%	91-95%
	76-80%	96-100% (highest scores)

City Limit
 Sphere of Influence
 General Plan Planning Area

Map 3: Disadvantaged Communities in Stockton

Table 5-3. (DWR Table 6-3) Retail: Wastewater Treatment and Discharge Within Service Area in 2015

<input type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The Supplier will not complete the table below.										
Wastewater treatment plant name	Discharge location name or identifier	Discharge location description	Wastewater discharge ID number (optional)	Method of disposal	Does this plant treat wastewater generated outside the service area?	Treatment level	2015 volumes (ac-ft)			
							Wastewater treated	Discharged treated wastewater	Recycled within service area	Recycled outside service area
Stockton Regional Wastewater Control Facility	Delta	San Joaquin River		River or creek outfall	Yes	Tertiary	23,349 ^(a)	23,349	0	0
						Total	23,349	23,349	0	0

Table 1: Retail Wastewater Treatment

Recommendations:

The best recommendations come around the consideration of water as a commodity, human right and an element of the natural environment for the consideration of sustainability equity as well as the creation of sense of community in the Stockton Area.

The first recommendation that would revolve around sustainability and equity in the Stockton plan related to water issues would have the Waterfront as a prime location and would focus on the implementation of sustainability features in the high-quality housing and development around the waterfront area as it has a great use and proximity to the water supply and can also act as a great threat/danger to the fishes and other contamination of the water supply. The inclusion of water contamination measures and USGBC’s LEED certification with an important emphasis on the water and pipelines requirement. The water efficiency and water use reduction methods and the waste management guidelines that are present in the LEED BD+C

V4 handbook are crucial to incorporate in the recently planned development around the waterfront with proper monitoring and management would be a great way to incorporate sustainability as well as focus upon the long-term goal of equitable access to all as the wise consumption will allow the city to distribute more resources to everyone. The sustainability and equity of the area can also be expanded through the recommendation of public databases of accessible resources. More transparent the system such as water supply and quality standards in different areas are, more the people are aware and work towards the achievement of equity in the area.

The equity and environmental justice issue of distribution increases in the Stockton area regarding the lack of access to safe drinking water and thousands of residents are unable to find a sustainable source of drinking water due to the contamination. The CWS's should have a look at the communities that have been neglected from the radar and extend their services. The state and local policies should reflect upon the incentive structures that encourage cities and large water and wastewater systems. A potential mechanism should be devised that focuses upon the effectiveness of the law allowing all the communities to reach out and say their share of issues. The right to water should be reflected in full effectiveness and all the communities around the waterfront should be a part of the effective solution without any negligence. There also shouldn't be any specific distribution that favors any specific part of the city around the quality of water supply to ensure maximum equity.

There should be a strong implementation of propositions such as the CH-2.2 as proposed in the general plan. The focus on stimulation of investment through public-private partnerships to enhance the health of neighborhoods would focus on necessary sources such as water and

attempt at new policies in the field. It has been observed in the past that the government bodies have attempted at sticking to the same technologies of chloramines for the water cleanliness and used preventive measures such as bottled water or microbes to protect fish.

The development of partnerships with private companies would allow the new technologies of sanitation and introduce the new levels of monitoring the neighborhood health. It might be a little expensive to use as a tool but could be worth it from the tax payer's money. So, preventive measures such as the low tenure/time period of contact and ensuring the public/governmental monitoring would ensure less control and optimization of efficiency without the risk of jeopardy of equity.

Providing a long term funding opportunity and including the disadvantaged communities in the previous strategies would include in settlement and various new job creation opportunities in the area of health, equal distribution and environmental justice. The inclusion of fundraising opportunities and environmental justice active groups would also be a great way to understand the needs of the majority disadvantaged communities present in Stockton and cater to their needs in a more sustainable manner. The creation of reservoirs and urban rainwater catchments with the ultra-pure reclaimed water such as NEWater in the Singapore's efficient model might work as an inspiration for Stockton.

Focusing on the Urban Water Management Plan developed by the council, a recommendation would be to start encouraging and optimizing future recycled water use. As the city does not currently operate a recycled water system. The promotion of the need to the public and the awareness/education would contribute towards the interest of the authorities as the alternatives aren't being pursued due to the lack of public interest and funds. The zero use of

recycled water as seen in the table would create unfairness and disparity amongst the people and various communities at Stockton which would make equitable access a harder goal to achieve. The policy approach of the Sustainability Groundwater Management Act would also contribute towards equitable access for the future. The development of recycling water and working and promoting policies such as SGMA would allow more agencies to come in the play and decrease the inequality by increasing the supply and the quality of water to the different disadvantaged communities at Stockton.

The importance of education and outreach are crucial in making the underlining communities more aware and involved in the different decisions that are made in the city. There are many sustainability measures that the public doesn't know, many features that are not highlighted amongst the population which does not make them aware about their rights and duties and the impact of their involvement. The policylink as a site is also raises public awareness by advancing racial and economic equity. A public portal showcasing the distribution of the resources such as water, the advocates of the policies are available for outreach and support the change towards the equitable distribution and most importantly, thorough updates on the situation of the areas and implementation of the desired actions. The encouragement and incentivisations of all public education institutions to get involved in the process and promote equality and education would be a great step forward on the path of sustainability.

Observed in the evaluation is the need for emergency services and contingency plans in addition to all the safety measures recommended. The disadvantaged communities of Stockton have observed the lack of clean and fresh supply of water in the times of crisis and have often spent on bottled water which has violated their right of water. The future could change by the

introduction emergency water supply services that could be included in the sustainability plans for health and safety purposes. Maintenance of the piped systems, tanks and vents are extremely crucial to the sustainability plans as the external sources monitoring the facilities tend to neglect the reaction of material in the pipes and their effect on sanitation.

According to the suggestion of Travis Small in the MUD “ With the factories being one of the major pollutants and the industrial waste being one of the biggest contaminants of the surface water in the waterfront area causes contaminants such as TCP1T3 to pollute the area, the development in the area would only further encourage this type of attitude.” A strict action against the misuse of the known chemicals that are harmful for the water, creating a public database that would highly contribute to the equity of all citizens in the area and benefit the water sources and not let companies or corporations get away with the misuse of the harmful and hazard waste that is potentially a threat to the low-income community. The creation of policies that keep in check the levels of waste generated and demands all private companies in the area to submit the proposal of their waste would really work to the city’s equity, sustainability and advantage. Such policies are motivated to be included in the general plan regarding the rules and regulations and functioning of the companies in the area which should also be monitored by the state.

Conclusion:

Regarding the paper of water issues, sustainability and equity, the conditions in Stockton regarding water propose contamination and an unsafe environment which causes risks for the citizens and put many low-income communities at a disadvantage. There are many positives

regarding the plans discussed above such as the involvement of smart growth strategy, opening space for agriculture and other sustainability measures. Where low income communities represented and the equity lags, the update on the future sustainability plans and a look of the planning officials on the sustainable disposal and development around sensitive areas of the city would definitely make it better. The highlight on the communities and equity comes by keeping the big corporations and the sustainable habits of the authorities in check and the creation of jobs and focus of outreach programs would make the citizens of the area more aware and educated. The new recycled water use plans and optimization of natural resources would definitely get a new aspect of the city out and improve the quality of life of its citizens.

Transcript

Interview : Travis Small - MUD Water Field Office - Stakeholder and manager in the Water case in Stockton:

Interview Method - Through the Phone

Contact - 209-937-5725 Conversation Time Period - 34 Minutes

Highlights :-

Topic 1 - Best Methods for the Water Safety Currently in use by the county are the mentions of conventional plants, microfiltration and the cleaning of pathogens with the incentive of pollution prevention. The source water is also gone through Sanitation inspection and the analysis of water quality and the PH of the water.

Topic 2 - **Equity** in the Stockton area at the residential level is provided by the water authorities are firstly by ensuring the **same amount** of treated water reaches the affluent as well as the poor/low income neighborhoods by the same tap size which would only differ for bigger spaces such as parks and green spaces. The same quality from the same source and similar access is a close interaction with equity. The online posting of the CCR and the characteristics and the quality of water provided to the different neighborhoods being the same.

Topic 3- **In comparison to Flint**- decoding the case at Flint and the issues of environmental justice, it is a blame on the old homes rather than the poor homes and the sad coincidence of the collision is what led to the tragedy including the lead in the water. The presence of no old systems in Stockton and the processes

such as the Lingular index testing (testing how corrosive the water is) 2 sets of contamination sites with reservoirs makes the situation better. The noter testing and ozone eliminates other risks putting the citizens in a better place.

Topic 4- **A unique sustainable measure** that can be counted in the first in use discharge in the delta and the equal pulling out of the reuse in the future. Where the reuse is natural, other recycling systems he would agree would come as a measure towards creating more clean water and using it in the best way to provide equality to the places where water might be scarce. This would also contribute towards the increase in supply for the demands of the Disadvantaged communities.

Topic 5- **Outreach programs** and the **awareness** would also play a very crucial role in the functioning of the equitable society and the understanding of the infrastructure that motivates the cleaning and the responsibility of the citizens that comes to be extremely important for a sustainable future for water. Where the **tours** of high school and college students are less around the area that focus on treatment and the path of the water that reached to their tap. Using more features **to build upon in the sustainable plan and further pay attention to the outreach** would create an informed society which would further lead to equal access and equal awareness. The access of all can be enhanced through the creation of public portals as a part of the safety and communications in the future sustainable plans

Topic 6- The situation of the people in the southern area comes out to be a concern due to the two branches of issues related to contamination of water and the equal distribution of water in the area. The two things linked to the issue are **money** and **education**. **Distribution is too expensive**, the lack of management from the authorities and the lack of understanding of the low- income communities to process and fight about the issue regarding their rights and doing something about the situation. A focus on these two directions may be a beneficial way to go around the situation. The issue of money and involving equity in the plan also comes from the involvement of the state and the help that can be received from the state authorities. **Sustainable plans encouraging funding and motivating the public and the authority to seek the help of the state to approach the water issue in a better manner might be a good idea.**

Topic 7- With the **factories being one of the major pollutants** and the industrial waste being one of the biggest contaminants of the surface water in the waterfront area causes contaminants such as TCP1T3 to pollute the area, the development in the area would only further encourage this type of attitude. A strict action against the misuse of the known chemicals that are harmful for the water, creating a public database that would highly contribute to the equity of all citizens in the area and benefit the water sources and not let companies or corporations get away with the misuse of the harmful and hazard waste that is potentially a threat to the low-income community. The creation of policies that keep in check the levels of waste generated and demands all private companies in the area to submit the proposal of their waste would really work to the city's equity, sustainability and advantage.

Topic 8- **Equity and sustainability lie in the same dimension** when it comes to water. Policies for discharges into water and no exemption with all the other suggestions would cover a wide variety of solutions that would bring the community together and set the future right!

Used

<https://medium.com/@sid.iyer/toxicity-in-a-california-city-is-stockton-the-next-flint-8fc506462a84>
<https://www.recordnet.com/opinion/20180820/guest-view-revised-water-grab-could-lead-to-severe-irreversible-impacts>
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https://www.bakersfield.com/news/everybody-wants-things-to-change-san-joaquin-valley-residents-head/article_4e38c4b8-0d37-11e8-a8c3-0bdf4ba6767e.html