Stakeholder Advisory Committee

Thurston Regional Planning Council

2424 Heritage Ct. SW, Olympia, WA 98502

Meeting 4 — October 27, 2016

SUMMARY NOTES

Meeting Facilitator: Paul Brewster, TRPC
Presenter: Mike Burnham

In Attendance:

Name	Organization
Amy Tousley	Puget Sound Energy
Barb Scavezze	Resident
Bill Paulen	Resident
Candace Penn	Squaxin Island Tribe
Chris Hawkins	TC Public Health
Dan Smith	Tumwater
Lisa Palazzi	SCJ Alliance
Morgan Greene	Nisqually River Foundation
Rachael Jamison	Port of Olympia
Rich Hoey	City of Olympia
Scott Davis	TC Public Works
Scott Morgan	The Evergreen State College

Greeting and Introduction

Paul Brewster acted as the facilitator for this meeting. Brewster opened the meeting by having each person present introduce him- or herself. For those who were not able to attend Meeting 3, packets are available for their binders.

Presentation: Identifying & Assessing Climate Risks

Mike Burnham gave a brief review of the process for identifying and assessing climate risks. Burnham offered some advice to the stakeholders in preparation for the small group review of the Goals & Stressors Table:

- Apply your subject expertise and local system knowledge.
- Write down plausible risks and
- opportunities — even if they seem insignificant — for the 21st century (emissions scenarios/models extent).
- If adding a new climate risk, consider whether research suggests it is applicable to South Puget Sound (e.g., extreme desertification not likely here).
- The same risk might affect several goals — and that's okay … different strategies may be needed to mitigate the risk and achieve the goals.

Small-Group Discussions

Burnham broke the stakeholders into four groups to discuss the Goals & Stressor Table in more depth. Each group was assigned three goals to review. The groups were asked how to reword or reorganize the information and to identify things that are missing from the table including risks and opportunities.

Group Members: Bill Paulen, Rachel Jamison, Rich Hoey

Goal 1: Create vibrant centers, corridors and neighborhoods while accommodating growth

- **Warmer Summer**
  (+) Increased incentive for green building practices (i.e. vegetative roofs)
- **Warmer Winter**
  (+) Warmer temps = more walking and biking
- **Increasing Drought**
  (+) Changes to xeric landscaping (more drought tolerant)
- **Sea-Level Rise**
  (-) Loss of utilities, cultural resources

Goal 3: Create a robust economy

- **Increasing Drought**
  (-) Less water supply impacts growth and economic development
- **Increasing Storminess**
  (-) Prolonged power outages will impact local businesses
  (-) Cost of development goes up
- **Sea-Level Rise**
  (-) Impacts on emergency access and egress
- **Ocean Acidification**
  (-) Additional costs to raise larval shellfish outside Puget Sound and transport them (add to goal 3 or 7)

Goal 11: Provide opportunities for everyone in the Thurston Region to learn about and practice sustainability

- **(Applies to All Stressors)**
  (+) Investors, companies looking to relocate business will look favorably at communities with clear strategies to address and mitigate their risks

Group Members: Chris Hawkins, Candace Penn, Scott Davis

Goal 4: Protect and improve water quality, including groundwater, rivers, streams, lakes and Puget Sound *(Water quality measured by temperature, volume, habitat and pollution)*

- **Warmer Summer**
  (-) Greater use of increased recreational use (boat spills)
  (-) Species shifts
  (-) Increased water withdrawals reduce flows
  (-) Increased pollutant loads (sediment, sand) overwhelm stormwater facilities
- **Warmer Winter**
  (-) Altered reproduction cycles appropriate for animals – changes hunting seasons (elk, goats, deer, water fowl) – tribal subsistence as well as recreational hunting for all
  (+) Less de-icing used on roads (salt and sand) - cost savings and improved water quality
- **Warmer Water**
  (-) Species shifts
- **Increasing Drought**

(-) Increased pollutant loads (sediment, sand) overwhelm stormwater facilities;
(-) Increased saltwater intrusion affecting groundwater

- **Increasing Storminess**
  (-) Greater mobilization of pollutants due to greater saturation of soils
  (-) More overflow/combined sewer overflow events
- **Population Change**
  (-) Increases pollution related to transportation – more polluted runoff and spills
  (-) When combined sewer overflow occurs, more waste into water

Goal 5: Plan and act toward zero waste in the region

- **Warmer Winter**
  (-) More waste because of more recreational use
  (-) More facilities/maintenance needed at parks
- **Warmer Water**
  (-) More waste associated with greater recreation
- **Increasing Storminess**
  (-) Potential for more high wind events and coastal storms cause more waste
- **Population Change**
  (-) More spills

Goal 10: Maintain air quality standards

- **Warmer Summer**
  (-) Greater release of VOCs
- **Warmer Winter**
  (+) Less wood burning so less particulate matter
- **Increasing Storminess**
  (-) More air pollution due to increased use of generators due to power outages
  (+) Fewer inversion events in winter (not sure about science to support this)
- **Population Change**
  (-) Increases emissions and particulate matter

Group Members: Amy Tousley, Barb Scavezze, Scott Morgan, Lisa Palazzi

Overarching themes

1. We will need to move everything more and at greater distance (food to market, water to homes…)
2. We have an opportunity to do things differently (ag methods)
3. We will have to embrace low impact development – positive impact on all aspects
4. We will need more education to help people understand and respond to changes

Other notes

- Impacts of species migration and possibility for more invasive species
- We'll need to figure out different strategies for urban and rural ag
- Impacts on pollinators (covered in other goal?)
- The balance of power will shift in significant ways between wants/needs/availability.
- Opportunities for proactive long-range planning

Goal 7: Support a local food system to increase community resilience, health and economic prosperity

- **Warmer Summer**
  (+) Opportunity to grow more expanded and diverse crops

	(+/-) Opportunity/Necessity to try new methods, such as hydroponic (which would have impacts on other cells in the matrix) (+) More opportunity for rooftop gardens (-) Accelerated food spoilage and increased need for refrigeration (storage, production, distribution) Add chickens, goats and other smaller animals to heat stress item • **Warmer Winter** (-) Stresses waterfowl (-) May need increased regulation due to wetland impacts • **Warmer Water** (+/-) Stimulates algae growth – good for potential energy generation and as food source. May be toxic to other species and invasive. (+) Expansion in plant growth in greenhouses • **Increasing Drought** Need to increase diversity – drought tolerant species (-) Animal and vegetable matter waste will rot quicker – need to deal with (-) Current fertilizer products will likely not work. Need to explore higher nitrogen products. (-) May result in less productivity and therefore pressure to use more land • **Increasing Storminess** (-) Contamination of fresh water (-) Impact on wetlands
Goal 9:	Move toward a carbon-neutral community • **Warmer Summer** (-) Will be difficult to maintain adequate stream flows (-) Increased pressure for dam removal • **Warmer Winter** (-) Impact on reservoirs Warmer Water (-?) Possible impact on LOTT water treatment (-) Impact on wells – function and safety • **Increasing Drought** (-) Will need to move water farther resulting in higher transportation usage and energy usage (-) Soils and plant matter will break down faster Increasing Storminess (-/+) Pressure/opportunity to site more rooftop energy – microwave (-) Decreased predictability for power • **Sea-Level Rise** (-) Will move people out of dense urban areas to less dense = negative impact on transportation and increased greenhouse gas etc Add reclaimed water to the list with wastewater and stormwater • **Ocean Acidification** (-) Warmer water absorbs more gas • **Population Change** (-) Will use more energy and will need to move energy further (depending on where they locate)

(-) Will cost more to get information out to people re sustainability/energy use
(+) Support for more mass transit (depending on where people locate)
(+) Support for telework and other CTR strategies

Goal 12: Make strategic investments to advance sustainability regionally

- **Warmer Summer**
  (-) Will need short and long term cooling centers
  (+) Should stimulate low impact and energy efficient development
  (+) Should improve siting of facilities in denser areas
- **Warmer Water**
  (-) Will need more riparian shade and habitat
- **Increasing Drought**
  (-) Impact water usage and water rights issues. Could lead to greater conflicts between municipal and ag uses of water
  (+) Could increase water reuse (home and municipality)
  (-) Water costs will rise
- **Sea-Level Rise**
  (-) Will need to harden shorelines which is against current policy
  (-) Will need to relocate people and roads and other infrastructure
  (+) Provide opportunity to restore estuaries
- **Ocean Acidification**
  (+) Possibility of exploring de-salinization or other methods
- **Population Change**
  (-/+) Increasing need for transportation may lead to more transportation options
  (-) Will need to increase stormwater infrastructure investment

Group Members: Dan Smith, Morgan Greene

Goal 2: Preserve environmentally sensitive lands, farmlands, forest lands, prairies, and rural lands, and develop compact urban areas

- **Warmer Water**
  (-) Warmer water would negatively impact salmon habitat
- **Increasing Drought**
  (-) Drought could damage vegetation that stabilizes soil. Increased soil erosion due to wind.
  (-) Competing demands for water for salmon/freshwater habitat, hydroelectric generation, agriculture, households, and junior water rights holders.
- **Increasing Storminess**
  (-) Degradation of freshwater and marine habitat due to increases runoff, erosion/landslides.
  (-) Wind and wave action from more intense storms could degrade coastal habitat
  (-) Bigger stormwater management facilities compete with demands for open space.
  (+) More large woody debris improves stream habitat for salmon (?)
- **Sea-Level Rise**
  (-) Increases frequency, depth and duration of inundation of low-lying coastal areas, which could impact marshes, mudflats, and adjacent upland areas. *[modification of existing verbage]*
  (-) Rate of sedimentation at the Nisqually Delta may not be sufficient to counteract rising sea level.

- **Ocean Acidification**
  (-) Negative impact on aquaculture and shellfish fisheries (if "farmlands" include shellfish beds)
  (-) Ocean acidification may impact affect higher-trophic level species that depend on calcifying organisms (if "habitat" includes marine areas)
- **Population Change**
  (-) Competing demands for water will make it harder to preserve sensitive freshwater habitat.
  (-) Risks associated with development (more vehicles, roads, pollution, etc.) will fragment and degrade the quality of habitat.

Goal 6: Ensure that residents have the resources to meet their daily needs *(needs include water, food, shelter, healthcare, employment, education, transportation)*

- **Warmer Summer**
  (-) Decreased energy security due to competing demands on energy grid.
- **Warmer Winter**
  (-) Negative impact on winter recreation activities, such as skiing.
- **Warmer Water**
  (+) Lower water heating costs
- **Increasing Drought**
  (-) Less water security due to competing demands for water for salmon/freshwater habitat, hydroelectric generation, agriculture, households, and junior water rights holders.
  (-) Decreased food security due to impacts of drought on agriculture.
  (-) Raises the risk of wildfires, which could damage infrastructure, including homes, businesses, utilities, and roads. *[modification of existing verbage]*
  (-) Raises the risk of wildfires which could close roads and cut off access to vital goods and services (and jobs?) *[modification of existing verbage]*
  (-) Increases the risk of wildfire, which could impact residents' health and safety
  (-) Decreased air quality due to wildfires and wind erosion.
  (-) Increased the depth of well needed, increasing the cost to pump water.
- **Increasing Storminess**
  (-) Raises the risk of floods and landslides which could damage infrastructure, including homes, businesses, utilities, and roads. *[modification of existing verbage]*
  (-) Raises the risk of floods and landslides which could close roads and cut off access to vital goods and services
  (-) Raises the risk of power outages, especially during the winter.
  (-) Increased demand on emergency services and utility crews needed to respond to storm events.
- **Sea-Level Rise**
  (-) Raises the risk of coastal inundation which could damage homes and businesses.
  (-) Impacts on shoreline recreation activities
- **Ocean Acidification**
  (-) Threatens the ability of people who depends on species higher trophic-level species that depend on calcifying organisms.
- **Population Change**
  (-) Decreased energy security due to competing demands on energy grid
  (+) Increased population will grow the economy

	(+/-) Greater population diversity due to immigration (-) Greater population density could increase the spread of disease. (-) Increased traffic will degrade air quality.
Goal 8:	Ensure that the region's water supply sustains people in perpetuity while protecting the environment • **Warmer Summer** (-) Warmer temperature will decrease water supply due to increase competing demands for water (-) Reduced streamflow, increased evaporation and evapotranspiration. (+) Water shortages will encourage positive behavioral changes to conserve water • **Increasing Drought** (-) Drought will decrease water supply due to increase competing demands for water (-) More water shortages • **Increasing Storminess** (-) Increased runoff and less infiltration, decreasing groundwater recharge. • **Population Change** (-) Decrease the supply of water due to increasing demand for water from households.

Large Group Discussion

After the small group discussions concluded, Burnham asked each small group to report back what their changes/additions were for each goal. After reviewing changes, Burnham asked the group to provide comments on the overall Goals & Stressors Table and whether there was anything missing from the goals. General thoughts from the group included the following:

- Looking at shellfish closures due to warmer water and the economic impacts of that (captured in ocean acidification for both commercial and cultural purposes)
- Moving entire communities due to loss of habitat and jobs for shellfish (population change and ocean acidification)
- Adaptation strategies may directly conflict with state and federal policy. Impacts how the community can thrive. Short-term solutions cannot be used in perpetuity – they need to be short term while long-term solutions are developed and implemented.
- This is a BIG project with a lot of risks involved. If there is a way to pair it down to the most important risks, it will make it more digestible (Burnham clarified that the next step in the process – the risk assessment – will do exactly that)

Public Comment

No members of the general public were present to comment.