energizeEASTSIDE

PUGET SOUND ENERGY

April 2014 Public Communications Summary

5/28/14

The following is a summary of feedback received between April 1 and April 30, 2014. During this period the Energize Eastside project received 303 communications from the public. The communications were submitted via the project email address, the project website, or at community meetings. In addition, this report includes communications from an online survey that was available March 3-30 and imported into the project database on April 3. Communications address a range of topics and often discuss more than one topic and/or segment; therefore, many communications are categorized and discussed under multiple topics.

Feedback Frequency by Topic

The following table indicates the frequency with which various topics were discussed (total) and where a specific segment(s) was mentioned when discussing this topic*. Approximately half (160) of the 303 communications received during this period mentioned specific segments.

LESS MORE

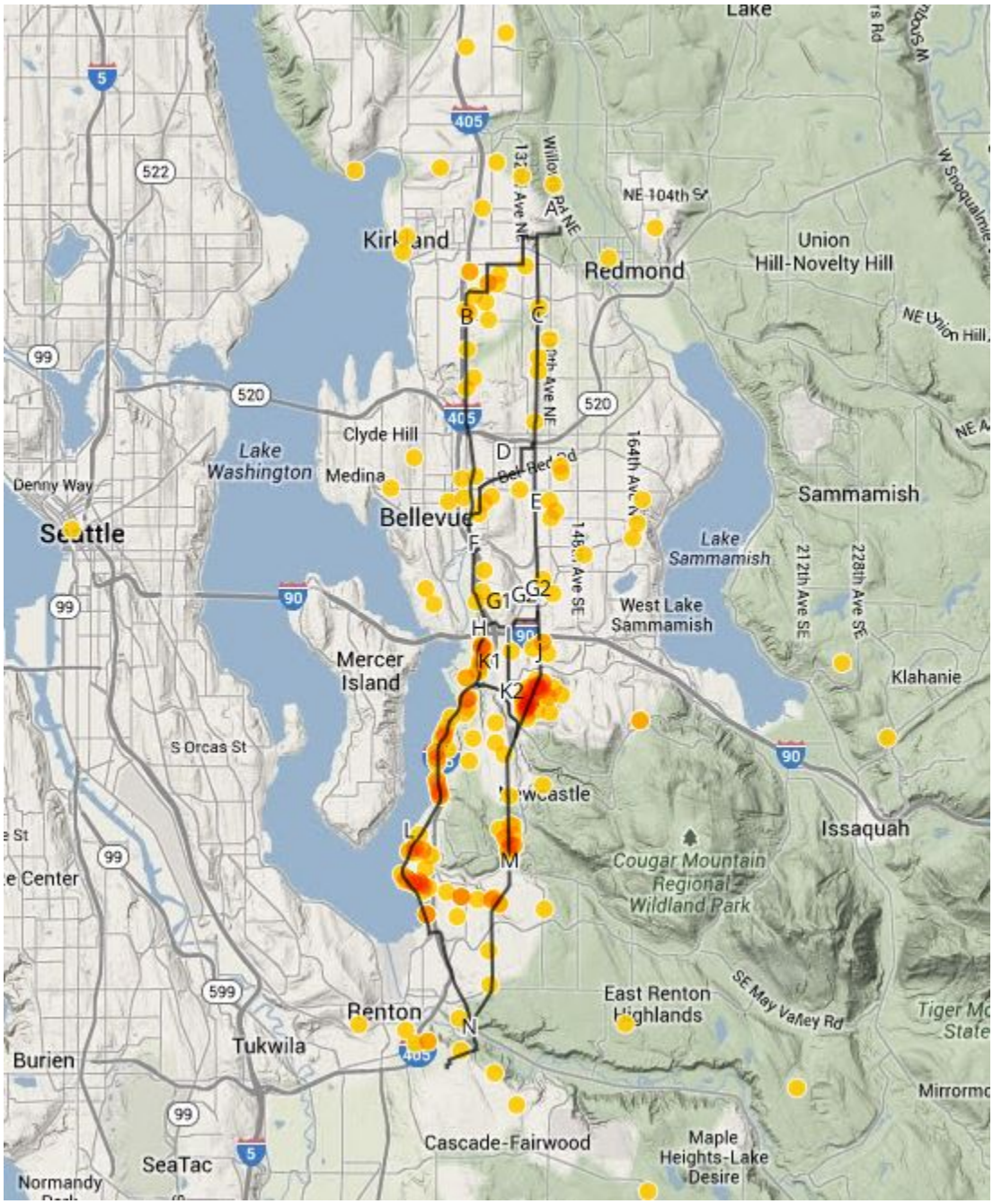
Table and map colors increase in intensity from yellow to red based on the frequency of occurrence.

Topic	Total	A	B	C	D	E	F	G1	G2	H	I	J	K1	K2	L	M	N
Total by segment	**303**	28	30	29	91	62	62	63	60	69	62	69	95	94	53	40	33
Visuals	90	5	5	6	44	39	39	40	38	46	39	46	51	51	20	13	12
Community character	79	13	13	13	51	39	39	39	37	39	39	40	54	54	17	16	15
Property values	74	8	8	8	41	33	33	33	32	37	33	37	45	45	18	12	12
Electromagnetic fields	58	11	12	12	32	22	22	22	22	22	22	22	33	33	12	13	11
Design structure type/appearance	47	9	9	9	20	12	12	12	12	12	12	12	22	22	13	12	10
Real Estate	40	6	6	6	10	4	4	4	3	4	4	5	5	5	3	2	1
Environmental	40	8	8	8	16	7	7	7	6	7	7	7	21	21	17	14	14
Underground	37	1	1	1	6	5	5	5	4	8	5	8	7	7	8	3	2
Cost	30	5	5	5	13	9	9	9	8	9	9	9	10	10	2	2	1
Project need	26	3	3	3	9	6	6	6	6	6	6	6	6	6	1		
Schools	26	4	4	4	19	15	15	15	14	15	15	15	19	19	5	6	4
Construction	24	6	6	6	11	5	5	5	5	5	5	5	6	6	2	2	1
Safety	22	3	3	3	9	6	6	6	5	6	6	6	12	12	8	7	6
Health	21	1	2	1	11	10	10	10	9	13	10	13	13	13	7	4	3
Vegetation	21	5	5	5	12	7	7	7	7	7	7	7	11	11	5	4	4
Alternative technology	14				1	1	1	1		1	1	2	1	1		1	
Permitting	9	1	1	1	1										1	1	
Noise	8	1	1	2	4	3	3	3	3	3	3	3	4	4	2	1	1
Recreation	4	1	1	1	1								1	1	3	1	1
Geology/soils/steep slopes	2	1	1	1	2	1	1	1	1	1	1	1	1	1			

**Please note communications often reference more than one topic and/or segment. As a result, totaling columns or rows will produce results that exceed the total number of communications received.*

Feedback Frequency by Address

The following map indicates the intensity of communications based on the addresses of individuals and organizations providing communications during this period.



Summary of Most Frequent Topics

Below is a summary of the topics (in order from most to least common) with key examples of the comments or questions received and a response from PSE. The communication excerpts are verbatim (including typographical errors) and reflect input from individuals who have contacted Puget Sound Energy about the Energize Eastside project. Please note that many communications received are statements and not questions. PSE makes every effort to respond to questions individually and has included general responses below by topic; general statements of fact or opinion do not typically receive detailed responses.

Multiple communication topics may be referenced in communications. Where appropriate, those topics have been combined in the summaries below.

The inclusion of the excerpts is to maintain a record of the information and input received by PSE and is not a reflection of PSE's concurrence or disagreement with any statements in whole or in part. The communication summary reflects PSE's public outreach process to assist the Community Advisory Group in gathering input that will be used to inform recommendation(s) about route selection.

Visuals and Recreation

Concerns have been raised about the potential for impacts to public and private property and the surrounding landscape.

Excerpts:

- *Somerset is a "view neighborhood". Our views of the city and mountains are a distinguishing feature, which could be greatly harmed by the proposed poles and wires.*
- *Many of our homes possess fabulous views of Lake Washington and the Olympic Mountains, which will be destroyed by the erection of utility poles and lines.*
- *The installation of the new power lines and their supporting towers along section L will obstruct the views of many residences on the hillsides along the entire route of section L*
- *Our beautiful views improve the quality of our lives. The increased power line height is a big damage.*
- *Any electrical improvements here should honor, protect, and supplement this park's importance both to the native wildlife and to the recreational needs of the people who hike within it.*

Puget Sound Energy Response:

Delivering a project like Energize Eastside in a dense urban and suburban area is challenging but PSE is committed to working with the communities involved to minimize impacts to the maximum extent practicable

Aesthetics and views could not be included in the initial route screening effort because there is no publically available data for these factors. However, visual impacts will be considered during the environmental review process that will be conducted to comply with the State Environmental Policy Act (SEPA). Additionally, photo simulations are currently being developed as a part of our ongoing public outreach process. As these simulations are complete, they are being shared publicly by being posted on our project website.

The placement or "spotting" of pole structures will be dependent upon factors such as available right-of-way width, location of access routes and obstacle avoidance. PSE typically has some flexibility when it comes to where poles are placed on a property. Whenever we can, we will work with property owners to identify the least impactful option for pole placement. In some cases, strategic planting of vegetation, such as trees with larger spreading crowns, can be used to diffuse and mitigate view impacts. In turn, the height, loading and overall size of each structure will be greatly affected by location. Additionally, recognized areas of environmental significance will be identified and avoided where practicable.

Community character

Concerns have been presented about impacts to unique community characteristics, primarily focused on the Somerset community.

Excerpts:

- *We oppose Industrial BLIGHT through sensitive residential neighborhoods and we share our elected officials and policy makers repeated stated goals of "preserving neighborhood character!"*
- *It just doesn't make sense to give more importance to keeping the transmission line away from a used car parking lot than to keep it out of the view of a million dollar view home -- in a community which for over 50 years has defined itself it terms of its views -- and protecting its views!*
- *The scale of 230 kV poles/lines is completely out of proportion in the Somerset neighborhood - where covenants prevent tree growth and homes taller than 25-30 feet.*
- *Your gigantic towers would be completely inappropriate for any of the dense residential areas surrounding the city but most certainly across face of the most prominent hill in town!*
- *Overall aesthetics does not match the neighborhood character.*

Puget Sound Energy Response:

We know that we'll be bringing changes to any of the neighborhoods where we install lines. We're actively engaging the public to discuss routing, impacts and potential design considerations to reduce these impacts while we move forward with this project, which is vital to maintaining reliable power for all of the customers in the area.

We encourage all potentially impacted community members to participate in ongoing community events to provide feedback on the various route segment options. In March and April, PSE hosted a series of Sub-Area workshops for neighborhoods to provide input on the proposed transmission line segments and to discuss the evaluation factors most important to their communities. In an urban area like the Eastside, there are unfortunately no corridors running north/south that completely avoid effects to residential neighborhoods. We know there is no easy way to get from Segment A to Segment N; there are challenges with each option and that is why we are first learning what is important to our customers and the communities we may be affecting before selecting a route.

Property values

Concerns have been raised about the potential for significant impacts to private property values and whether those impacts would be compensated for.

Excerpts:

- *What property value impact will we experience with power poles in the view scape.*
- *Our views of the city and mountains are a distinguishing feature, which could be greatly harmed by the proposed poles and wires. The impact on property values would be huge.*

- *This route will impose a decrease in the value of our homes and property, impacting our ability to sell our properties.*
- *There are significant issues with larger above ground lines that would negatively impact the residential property values. Properties here were purchased for their view appeal and many people have decades in home equity that would be lost if large power lines were put in place.*
- *Our beautiful views greatly enhance the quality of our lives and have a positive impact on the property values in the neighborhood.*

Puget Sound Energy Response:
When evaluating possible locations to site utility infrastructure, property values of the adjacent community are not taken into consideration because it is socially inequitable to make infrastructure siting decisions based on income-related considerations such as high-end, moderate or low-value housing. Similarly, a project's potential effects on surrounding property values are excluded from consideration of impacts to the environment under Washington's State Environmental Policy Act (SEPA), Ch. 43.21C RCW. Property values are comprised of many factors, including economic outlook and location, as well as proximity to jobs, schools, transportation, parks and other amenities. Out of fairness to and in consideration for customers of all income levels, PSE does not use property values as a factor when selecting routes.

Attempting to determine the impact of a transmission line on property values outside of the context of a purchase and sale transaction requires a certain degree of speculation. Due to the unique qualities of each property, there's no 'one size fits all' formula. PSE does not compensate nearby property owners for perceived loss of property value due to the installation of energy infrastructure. In this respect, PSE is no different than any other public or private developer. This approach is consistent with Washington law.

If new easements are required to site our facilities on private property, PSE will compensate the affected property owners based on fair market value.

Health, Electromagnetic fields, and Schools

Concerns have been presented about the potential for negative health and safety affects caused by high voltage transmission lines, particularly on students at school. While these are generally separate categories, communications typically relate these topics very closely.

Excerpts:
- *I am not convinced there is no EMF threat!!*
- *Comparing the EMF of appliances to the EMF of transmission lines, does not answer the question of the effect of experience 24 hr/day to EMF.*
- *Please do not risk our kids health. I know that not all the studies show a link between EMF and leukemia but some studies shows EMF can cause leukemia in kids. I do not want to test this on our kids.*
- *The health issues associated with this EMF is fairly well documented. The fields strength is directly proportional to the line voltage so the affect on residents adjacent to the current lines will greatly increase plus residence that are now only marginally affected will be greatly affected by the increase in affected area.*
- *Given the existing information regarding exposure to power frequency EMF and the growing number of jurisdictions limiting the construction of high voltage transmission near schools, the risk is real and the harm is foreseeable.*

Puget Sound Energy Response:
Over the past 45 years, there have been many scientific studies conducted to determine if EMF from transmission lines (called "power frequency EMF") has any effect on human health. To date, this large body of research does not show that exposure to power frequency EMF causes adverse health effects.

At PSE, safety is always our top priority. Many customers have questions about EMF and our team works to provide access to information on EMF in a few different ways. Specifically, we:

- Follow all applicable federal, state, county and city rules, regulations and standards when constructing power facilities for the safe and reliable delivery of electric service;
- Remain informed about important developments in EMF research from reputable, international and national scientific and public health organizations and agencies that have reviewed the research on EMF; and
- Share accurate and objective information about EMF with our customers.

Additionally, PSE understands that you, and other local residents, may have more questions about electromagnetic fields. PSE has hired Drew Thatcher – an independent, board-certified health physicist – to address more specific EMF questions. If you or your neighbors would like to ask questions of Drew, we would be happy to connect you with him for more information.

Also, in the next few months we will have information on EMF measurements in the existing utility corridors (what magnetic field measurements exists today) and modeling numbers with the new transmission line. Once the EMF modeling study is complete, it will be posted on our project website.

Regarding schools, the locations of schools were one of many factors considered when developing potential route segments. It is not uncommon for power lines to be sited near schools, or for schools to be built near power lines. However, PSE heard that this is a community concern as part of the Sub-Area outreach process and this feedback will be shared with the Community Advisory Group for further consideration during the route selection process.

Design structure type/appearance

Concerns have been raised about the appearance of structures.

Excerpts:

- *When construction starts, will old poles along the route stay next to the new poles, or will the new poles totally replace all poles along the route?*
- *I do not see any mention of H-frame in the "Design" section. There are likely areas where this design would be most appropriate.*
- *PSE staff has informed the city that expansion of the M line would eliminate unsightly wooden poles and replace them with fewer, but taller, metal poles. On the other hand, building the L line would result in the wooden poles remaining on the M line.*
- *Do power structures need to be ugly? Couldn't they be metal sculptures with a purpose? Let artists design new ones, in conversation with each community, within the necessary safety constraints.*

Puget Sound Energy Response:
While we do not have the preferred route or final design yet, we anticipate using steel monopoles made of galvanized or weathering steel. We estimate the poles will generally be between 90-125 feet, but they could be taller or shorter depending on specific circumstances. PSE will be asking for community

feedback on these options. Pole height will depend on several factors, such as topography and obstacles, wire tension, whether a pole is located in a straight line or at a corner, and the distance between poles, which could range from 200 feet to 1,000 feet. In general, the taller the poles, the longer we can make the distance between them.

We will not build lattice towers for this project. To view sample pole images and photo simulations from each Sub-Area, visit the Design page on our website.

Real estate

Additional concerns have been raised about a range of related subtopics, including easements.

Excerpts:

- *What is the width of PSE's easement along the railroad tracks, along the proposed L route? I was told it varies, but would like to get more specifics. Does that mean it's 100-feet wide, 50 feet? I'd like to know how much flexibility you have in locating the poles.*
- *In this segment there are many many houses which do not in fact have the 100 foot clearance that you falsely assume in the LRT Routing Report.*
- *All the horse farms should be protected.*

Puget Sound Energy Response:

At this time, we're in the early stages of the public route discussion, so we don't have the route configuration identified yet. Nonetheless, when selecting a route for a new power line, PSE considers it an opportunity to locate the line where other lines already exist whenever practical. That said, existing right-of-way is just one of many factors we look into when siting new power lines. In a dense urban area like the Eastside, there is no easy solution to selecting a route. For that reason, we felt an obligation to identify all reasonable route options within the project study area. This was done by using a computer-based modeling tool to analyze key criteria like geographic barriers, land uses and impacts to the environment. Based on this analysis, route segments were identified that included an existing corridor and road rights-of-way.

If the use of private property is required, PSE will negotiate fair market value purchase of easements with the affected property owners. Our preference is to arrive at mutually acceptable terms outside of court rather than using condemnation and we will work cooperatively with property owners to that end. If a legal path towards resolution is necessary we will treat all landowners fairly, with dignity and respect and we will continue to negotiate in good faith throughout the process.

At this time it is too early to say whether we'll need additional easements; existing easements do not require additional compensation. Like any developer, PSE must comply with local zoning codes and development standards and obtain all necessary permits for the project. We are seeking input from the communities and our customers throughout the siting process to consider designs which could minimize impacts. In general, PSE prefers to site projects along public rights of way or existing utility corridors wherever possible.

Environmental, Permitting and Vegetation

Questions about the environmental review process and impacts to wildlife and vegetation have also been presented.

Excerpts:

- *How many acres of parks and forest would be destroyed by each segment?*

- *The proposal to put high voltage power poles along lake Washington is ludicrous. This area is not only a valued recreation area but also home to numerous species of birds.*
- *Segment M runs through May Creek Park, which is part of a continuous green space/corridor from Cougar and Tiger Mountains to the shore of Lake Washington. Any electrical improvements here should honor, protect, and supplement this park's importance both to the native wildlife and to the recreational needs of the people who hike within it.*
- *Does PSE need to go through each city land use and building permit?*
- *On the L Route-- Cutting down 3600+ trees will destroy the noise buffer for I-405-- will you be replacing this with a substitute buffer? Where will all the wildlife go?*

Puget Sound Energy Response:
As with all of our projects, PSE is committed to minimizing, where practicable, environmental impacts that can result from our construction, operation and maintenance of electric transmission lines. When impacts cannot be avoided, PSE provides appropriate restoration or mitigation. For illustration, regardless of the route selected, federal, state, and local regulations do not allow construction stormwater that exceeds specific water quality parameters to run off into waters of the State. Erosion Control Planning will be incorporated into the project design. This is standard practice, as all large scale projects are required to assess potential drainage impacts. Once the route is selected, a detailed engineering analysis will be performed to address possible stormwater issues. Transmission lines typically have a small impervious footprint and therefore are not a major contributor to stormwater runoff. Additionally, runoff from PSE's infrastructure facilities will comply with the appropriate storm water manuals.

As we continue design of the Energize Eastside project, PSE will collaborate with local, state and federal agencies to ensure compliance with all applicable regulations. This includes meeting all local permit requirements and conducting an environmental review as part of the State Environmental Policy Act (SEPA). The SEPA process is used to help decision makers understand a project's potential to cause impacts to the natural and built environments. Potential effects on wildlife such as bald eagles would be identified during that process, along with appropriate restoration or mitigation. Additionally, PSE has an extensive avian protection program and often includes protective measures to power line design. More information on this program can be found on our Protecting Birds web page.

Please visit our Environmental Review web page for more details.

Underground

Suggestions have been received that PSE construct the new line underground, along with questions about undergrounding costs and feasibility.

Excerpts:

- *I strongly oppose the J segment running above ground in our densely-populated Eastgate and Somerset residential neighborhoods. We would like these power lines to be buried if the additional cost can be covered in an equitable fashion.*
- *I hear the # thrown around that our electric bills would double if we went underground. Our electric bills for the last 12 months were ~$1200. I would happily pay double that per year, before you take hundreds of thousands of dollars from our property value!!!*
- *An estimate per foot for underground assessment per property owner is needed for property owner to evaluate if going underground is feasible.*

- *What are the tree removal requirements for under-grounding VS above ground lines. Specifically will all trees over 15' in height require removed if they are within the easement of the above ground lines?*
- *Please focus on a solution that buries the power cables underground in these sensitive areas. I realize there is a higher installation cost but this is a rate burden that all of your rate payers should share in (especially the new and growing companies that are the biggest consumers of your product).*

Puget Sound Energy Response:
Overhead transmission lines are PSE's first option for standard service due to their reliability and affordability, both of which are important to our customers. Unless a community or local jurisdiction requests the lines be put underground and are willing to pay the cost difference regulations require PSE to construct overhead transmission lines. These regulations are founded in fundamental public policy, which hinges on fairness and reasonableness for all customers, regardless of income.

The biggest challenge to underground transmission lines is cost. The construction costs for an overhead transmission line will be about $3 million to $4 million per mile, versus $20 million to $28 million per mile to construct the line underground. These figures only take engineering and construction costs into consideration, and do not include additional costs such as land acquisition, traffic control, relocation of existing underground facilities that may conflict with an underground transmission line, future increased operation and maintenance costs, or taxes and overheads. These additional costs can be very significant – sometimes two to three times the construction costs.

When a transmission line is constructed overhead, project costs are distributed evenly between PSE's 1.1 million customers. If a transmission line were to be constructed underground, we can't justify asking customers across PSE's entire service territory to pay the significant cost increases for a local aesthetic benefit. That's why, when an overhead line is a viable option like in the case of the Energize Eastside project, our tariff regulated by the Washington Utilities and Transportation Commission requires the local jurisdiction or customer group requesting that the transmission line go underground to pay the difference between the overhead and underground costs.

The tariff is in place to protect all of our customers from substantial bill increases that would result from frequent requests to underground or relocate transmission lines (view the full tariff: Schedule 80, Section 34). We recognize some of our customers are in the financial position to pay the substantial increase in rates to underground this project and others, but we have many low- and fixed-income customers who depend on affordable rates. It is PSE's responsibility to balance the needs of all customers and provide service that is both reliable and affordable. These regulations are founded in fundamental public policy, which hinges on fairness and reasonableness for all customers, regardless of income. Having the local community pay to underground power lines for the aesthetic benefit is not new – it is the same concept our communities follow today when a new development undergrounds the lower voltage distribution power lines.

In addition to cost, there are other factors to consider. For example:

- Putting power lines underground can have bigger environmental and neighborhood impacts. Undergrounding transmission lines requires extensive vegetation removal, trenching and installation of large (20 feet x 30 feet) access vaults every quarter mile and can be very disruptive to neighborhoods and the environment.

- Underground lines typically take longer to repair, and repairs are more difficult. When an overhead line fails, our crews can often repair it within hours. Repair of underground transmission lines can take days and even weeks, depending on the repairs that need to be made.

All of these factors are why PSE is proposing to construct the Energize Eastside project overhead.

Read more in our undergrounding fact sheet.

Cost

Feedback varies from suggestions to build the lowest cost alternative to ideas about how to spread the cost equitably.

Excerpts:

- *Since this line benefits the region, why is it fair to stick it to our neighborhoods for the benefit of others?*
- *Overhead wires are the cheapest, but certainly not the only options.*
- *The increase in electrical needs is not coming from this neighborhood and this neighborhood should not pay the price.*
- *Why only the people who have properties around the power lines need to pay the cost? Why the cost is not shared between all the beneficiaries of this project?*

Puget Sound Energy Response:

Upgrades or additions to the electric infrastructure are shared by all of PSE's 1.1 million electric customers and paid for over time (unless a more expensive upgrade or addition is made to benefit only a certain area or community, such as undergrounding a line for the purpose of preserving aesthetics). Impacts to individual residential power bills will be small. We don't yet know the total cost of the project, but estimates range from $150 million to $300 million. While there are many factors that go into determining the individual customers' monthly bill increase, we roughly estimate that it will range from $1 to $2 per month for typical residential customers. Once we select the route and determine the final design and alignment, we will have a better idea of the total cost.

Project need

Questions about how growth was predicted were posed, as well as requests to document the need.

Excerpts:

- *If PSE really wants a long term plan, a new plant is perhaps the best solution.*
- *Mitigate the urgency with more aggressive conservation efforts*
- *Have the large commercial enterprises (Microsoft, Google, Amazon, etc.) been asked/queried as co-generation, taking responsibility for their own power needs?*
- *Is there an authority that says "Yes, it's time to do this," is this a state requirement, is it a decision on your own?*

Puget Sound Energy Response:

Much has changed on the Eastside in the last 20 years. Not only have communities grown and prospered, but the way we use electricity has changed—we plug in more devices and build bigger homes. Demand for electricity has grown dramatically, and it's time for our infrastructure to catch up.

Economic development, job growth and associated population growth on the Eastside depend on a robust electrical transmission system. The Bellevue-Redmond area has become a major regional

economic and employment center with 140,000 jobs and 143 corporate headquarters, for which many people have moved to the surrounding area. Eastside population has grown by seven times since 1960, and recent growth trends are expected to continue – in fact, the Puget Sound Regional Council recently predicted that population will grow by more than a third between 2012 and 2040, with population in the Bellevue central business district growing by more than 275 percent by 2040[1].

At the same time, this economic rejuvenation is straining our region's existing electric system. Growth studies project that demand for reliable power will exceed capacity as early as 2017. We have essentially outgrown the electric system that serves our communities. Without substantial electric infrastructure upgrades, tens of thousands of residents and businesses will be at risk of more frequent and longer outages.

Additional information is available on the Eastside Need page of our project website.

Construction

Questions and suggestions have been submitted regarding ways to avoid and/or address construction impacts.

Excerpts:

- *What challenges do you see in construction along route I? (Factoria Blvd)*
- *The construction and maintanance of the line [Segment L] will disrupt the local wildlife and create a potential for contaminating the sensitive wet lands, shorelines, and waters of Lake Washington.*
- *Traffic disruption while constructing the line along Factoria Boulevard would be unacceptable - since this is a residential area the city will require construction to be done during the day. Excavating the foundations for the poles will require daytime closures of Factoria Boulevard with severe traffic impacts.*
- *The challenge of drilling deep foundations for the poles alongside the Olympic fuel pipeline has been discussed. Despite PSE's assurances that this work can be done safely, accidents do happen, and in this case would have catastrophic consequences. That remains a real worry.*

Puget Sound Energy Response:

Construction of the project is a few years out – anticipated to start in 2017, once we receive the necessary project permits. At this time we are working on selecting a route, so it is too early for us to know the exact construction schedule or potential impacts. As we know more about construction details, we will notify and keep affected businesses and property owners informed of the schedule and activities.

Construction activities typically include field surveys, working with property owners on pole locations, trimming and removing vegetation to ensure safe operation of the line, installing new transmission poles, stringing the transmission line wires, and cleaning up, restoring and re-planting vegetation. At every step along the way we will work to keep the community informed of the project's progress.

For any segment identified as part of the preferred route, we will deal with traffic during construction by working with the local jurisdiction to balance our construction needs with minimizing traffic impacts. For example, some options we've used in the past to minimize traffic impacts in urban areas include

[1] In April 2014, the Puget Sound Regional Council updated their growth forecasts to 280 percent by 2040, but at the time these responses were given, PSE provided the figures noted.

condensed work hours, night work (consistent with noise regulations), and using additional crews to expedite construction. We also use signs and flaggers to direct traffic during construction.

During the construction of any infrastructure project, PSE's principles are to:

- Keep the safety of the public and our employees as our top priority during the construction of our projects
- Work with the community to develop a constructible project design
- Follow strict safety and environmental procedures and guidelines
- Ensure design and construction work is conducted in accordance with all applicable federal, state and local codes and regulatory requirements, including construction noise and work windows
- Strive to limit the impact on landowners, the community and the environment during construction
- Notify and keep impacted businesses and property owners informed of specific construction activities and the schedule of work
- Aim to complete construction with as little disruption as possible by using best construction practices, as well as by designing the project in a manner that minimizes impacts while utilizing existing easements for construction access
- To the best extent practicable, restore property impacted by construction to its previous state. When restoration is not possible, PSE will offer in-kind mitigation

Safety

Safety concerns related to a variety of factors, including the Olympic Pipeline and its proximity to the proposed transmission line, have been raised.

Excerpts:

- *Please tell me there is no chance of one of these 12 story towers falling on my house.*
- *What is the minimum safe distance for vehicle traffic to transmission lines.*
- *Pipeline safety is a significant neighborhood concern.*
- *Putting high rise wires here, will increase the chances of a helicopter crash into residential neighborhoods.*
- *Old, underground coal mines in this area; potential for sinkholes.*

Puget Sound Energy Response:

Safety is always our top priority at PSE. Across North America, significant high-voltage electric transmission lines (even at voltages much higher than 230 kV) exist parallel and adjacent to petroleum product pipelines like the Olympic Pipeline and have been operated safely in close proximity for many decades.

PSE is also a natural gas company. PSE and its contractors are very familiar with concerns regarding pipeline safety and employ safe construction practices when performing work in the vicinity of pipelines. Our experiences and those of other utilities and pipeline companies have demonstrated that power lines can and do safely occupy the same corridor as pipelines.

PSE has a long history of working closely with Olympic. We've shared this corridor with Olympic Pipeline for decades and have a shared interest in the protection and safe operation of the facilities in the corridor, As an example, PSE and Olympic wrapped up a project in 2010 that's similar to Energize Eastside. We replaced existing H-frame poles with new poles and 230 kV lines in an existing easement shared with the pipeline. The Energize Eastside project manager, Leann Kostek, safely managed construction of the Sedro Woolley-Horse Ranch 230 kV project that ran from Skagit County to Snohomish County.

PSE also has a history of moving pipelines when required and understands the construction and safety issues facing such moves. For example, PSE is moving its natural gas pipeline for the Alaskan Way Viaduct construction. Additionally, PSE and Olympic are working with Sound Transit to move poles and the pipeline for the East Link project.

Regarding earthquakes, we take geologic conditions, including potential for earthquakes, into the design of electric transmission lines. When designing any transmission structure, engineers consider a wide range of loading scenarios (e.g. load cases) that the structure may experience over its service life. While engineers consider these load cases, we are concerned with identifying and applying the most stringent load cases, or combinations thereof, that govern the strength requirements of the structure to withstand these loads. In the experience of transmission engineers, high wind events, wind combined with ice, or extreme ice loads govern the design of structures. It is standard utilities practice to design transmission structures to withstand wind/ice combination loads which are considered more stringent than the loads induced due to ground motion.

Alternative technology

Questions and suggestions have been posed regarding ways to address the project need without a new transmission line.

Excerpts:

- *Is it cheaper to just build a small power plant somewhere near Point A, either in northeast Redmond or further north? Could use natural gas as fuel, or powered by water from Snohomish river?*
- *Look at long range needs -- solar for all new buildings*
- *How extensively has PSE studied energy efficiency solutions?*
- *The "No Build" Alternative is not being taken into consideration.*

Puget Sound Energy Response:

PSE has taken significant steps to get the maximum benefits out of its electric system. In fact, through upgraded lighting, appliances and equipment, increased weatherization, and energy-efficient building technologies, PSE customers helped us save enough electricity to power 30,000 homes in 2012.

However, conservation alone won't create the capacity to keep up with our region's growth. The Eastside economy and population are growing far faster than our conservation efforts can keep up with. Without substantial electric infrastructure upgrades, tens of thousands of residents and businesses will be at risk of more frequent and longer outages. The problem we face is not that we don't have enough energy to power Eastside communities. Instead, the problem we need to solve is transporting the energy we have to the fastest-growing places and the people who need it. The Eastside is growing faster than any other region in Washington, which is straining our region's electric system. Growth studies project that demand for reliable power will exceed capacity as early as 2017, increasing the possibility of outages for as many as 60,000 customers in the Eastside.

You can read more about the alternatives studied in our needs assessment report, solutions report, non-wires solution analysis, and much more on the Energize Eastside project website.

Noise

Concerns have been expressed about noise generated from power lines, particularly in damp conditions.

Excerpts:

- *Will impact Gene Coulon Park that borders the southern end of the lake. Will the "hum" be audible when at the park? This would seriously decrease the quality of the experience.*
- *In addition at times, the existing lines buzz; I anticipate newer lines will also buzz making the noise borderline irritating.*
- *Noise on rainy days.*

Puget Sound Energy Response:

In general, 230 kV transmission lines do not produce noise like that of higher voltages. This is because over the years, transmission line design improvements have contributed to minimizing audible noise levels. At voltages of 230 kV and below, the 'corona effect'[2] – and any resulting noise – should be negligible. Generally, these impacts only occur at voltages higher than 230 kV (typically 345 kV and above). In the rare instance where noise can be heard from a 230 kV line, a simple adjustment to a piece of equipment on the line can usually solve the problem. An evaluation of audible noise will be conducted as a part of the overall design of the transmission line.

Geology/soils/steep slopes

Questions regarding geology and groundwater effects/conditions have been presented.

Excerpts:

- If trees are cleared for the lines, Woodridge loses its protective natural buffer from air, noise, and visual pollution. Clearing on such a steep slope will affect storm water runoff.

Puget Sound Energy Response:

Each segment option will undergo detailed siting of structures to avoid or minimize impacts to the extent practicable. PSE will perform a variety of engineering analyses and studies when designing the transmission lines in order to understand the environment where the structures will be located. For the segments that are selected, PSE will perform comprehensive geotechnical evaluations of each corridor, and the design of the new transmission lines will take into account various factors such as soil type and strength, groundwater, and other factors.

The project will undergo environmental review as part of the State Environmental Policy Act (SEPA) no matter what route is selected. Additionally, because we are still working on identifying the route, we have not made application for construction permits.

[2] The Corona effect is the breakdown of air surrounding an energized conductor which sometimes causes popping sounds.