CITY OF BELLEVUE

In Partnership with the
University of Washington

USER-CENTERED DESIGN RESEARCH AND RECOMMENDATIONS FOR THE CITY OF BELLEVUE'S PUBLIC WEBSITE

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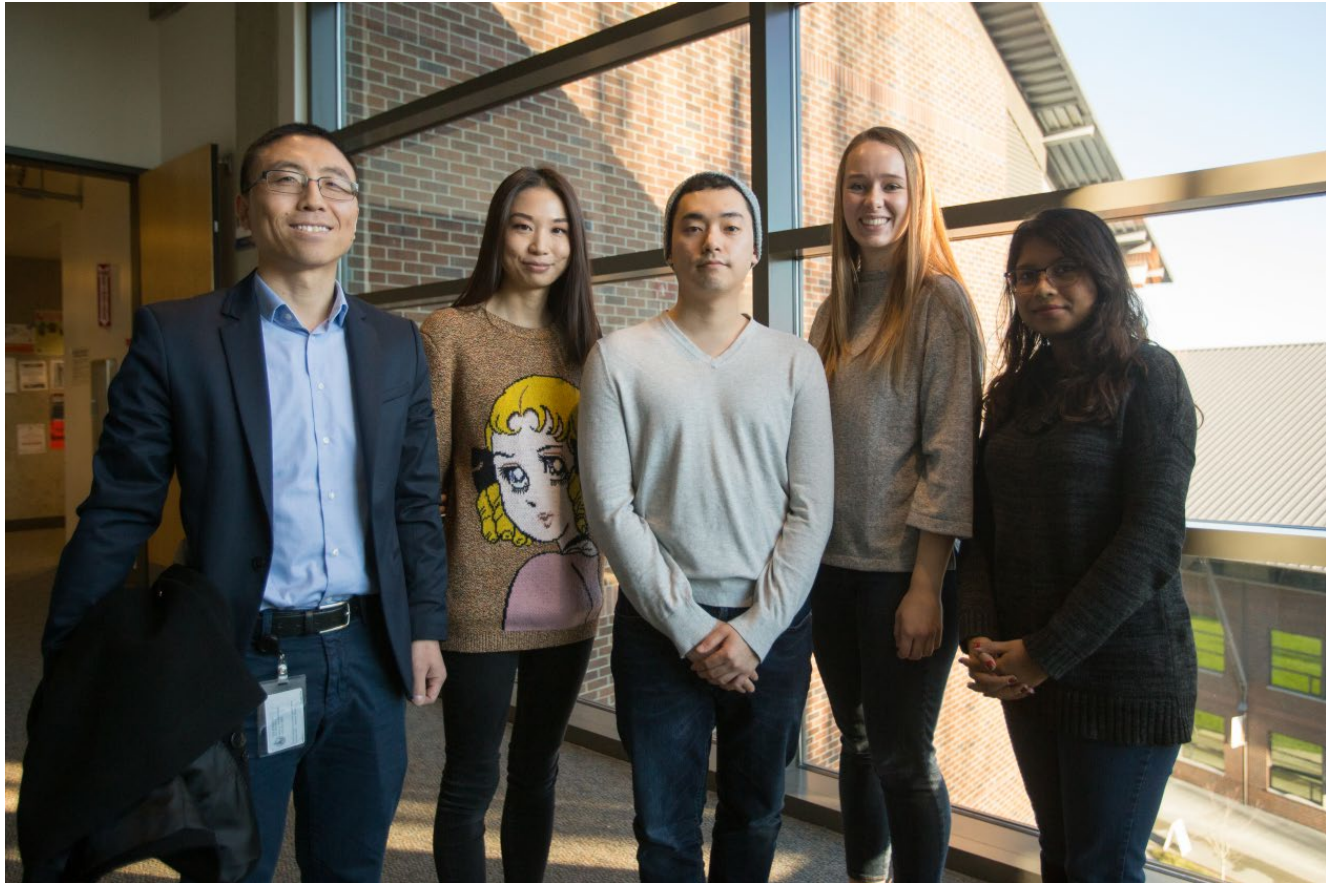
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Livable City Year 2018–2019
in partnership with
City of Bellevue

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Students with Project Lead Enzhou Wang (from left to right: Enzhou Wang, Yin Yin, Jeffrey Oh, Angela Birchman, and Rutuja Nehra)
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ABOUT LIVABLE CITY YEAR

The University of Washington's Livable City Year (LCY) initiative is a partnership between the university and one local government for one academic year. The program engages UW faculty and students across a broad range of disciplines to work on city-defined projects that promote local sustainability and livability goals. Each year hundreds of students work on high-priority projects, creating momentum on real-world challenges while serving and learning from communities. Partner cities benefit directly from bold and applied ideas that propel fresh thinking, improve livability for residents, and invigorate city staff. Focus areas include environmental sustainability; economic viability; population health; and social equity, inclusion and access. The program's 2018–2019 partner is the City of Bellevue; this follows partnerships with the City of Tacoma (2017–2018) and the City of Auburn (2016–2017).

LCY is modeled after the University of Oregon's Sustainable City Year Program, and is a member of the Educational Partnerships for Innovation in Communities Network (EPIC-N), an international network of institutions that have successfully adopted this new model for community innovation and change. For more information, contact the program at uwlcy@uw.edu.

ABOUT CITY OF BELLEVUE

Bellevue is the fifth largest city in Washington, with a population of more than 140,000. It's the high-tech and retail center of King County's Eastside, with more than 150,000 jobs and a skyline of gleaming high-rises. While business booms downtown, much of Bellevue retains a small-town feel, with thriving, woodsy neighborhoods and a vast network of green spaces, miles and miles of nature trails, public parks, and swim beaches. The community is known for its beautiful parks, top schools, and a vibrant economy. Bellevue is routinely ranked among the best mid-sized cities in the country.

The city spans more than 33 square miles between Lake Washington and Lake Sammamish and is a short drive from the Cascade Mountains. Bellevue prides itself on its diversity. Thirty-seven percent of its residents were born outside of the US and more than 50 percent of residents are people of color, making the city one of the most diverse in Washington state.

Bellevue is an emerging global city, home to some of the world's most innovative technology companies. It attracts top talent makers such as the University of Washington-Tsinghua University Global Innovation Exchange. Retail options abound in Bellevue and artists from around the country enter striking new works in the Bellwether arts festival. Bellevue's agrarian traditions are celebrated at popular seasonal fairs at the Kelsey Creek Farm Park.

Bellevue 2035, the City Council's 20-year vision for the city, outlines the city's commitment to its vision: "Bellevue welcomes the world. Our diversity is our strength. We embrace the future while respecting our past." Each project completed under the Livable City Year partnership ties to one of the plan's strategic areas and many directly support the three-year priorities identified by the council in 2018.

BELLEVUE 2035:
THE CITY WHERE YOU WANT TO BE

User-Centered Design Research and Recommendations for the City of Bellevue's Public Website supports the High-Performance Government target area of the Bellevue City Council Vision Priorities and was sponsored by the Department of Information Technology.

HIGH-PERFORMANCE GOVERNMENT

Bellevue is characterized by high-performance government. Our residents live in a safe, clean city that promotes healthy living. The perception of safety contributes to the success of businesses and neighborhoods. Police, fire and emergency personnel are seen by citizens every day, and we ensure that these services reflect high standards and pride.

People are attracted to live here because they see that city government is well managed. Our high quality of customer service ensures that residents realize a direct link between their tax dollar investments and the services they receive. We make public investments wisely, assuring taxpayers that we are living within our means, while also ensuring that we have superb infrastructure to support growing businesses and desirable residential opportunities. We have beautiful public buildings that residents point to with pride. Government plays its role in supporting the careful balance of neighborhoods, commercial and retail growth, diverse residential living opportunities, and amenities that characterize Bellevue. City leadership fosters careful, long-term planning, responsible financial policy, and thoughtful partnerships with businesses, the nonprofit sector, and the region.

We seek input from our residents and businesses, and this input informs city decision-making. We make decisions in a transparent manner. We support public engagement and connectivity. Bellevue does its business through cutting-edge technology. City government uses technology to connect with its residents, giving them voice in their community. Our boards, commissions, and other citizen advisory groups assist the City Council in providing superior leadership by representing the diverse interests of the city and providing thoughtful and creative ideas that assure sound policy direction and decisions.

Our residents care for Bellevue. They speak up and collectively work to address our mutual needs. In Bellevue, our commitment to public service is paramount. Our residents know that their local government listens, cares about, and responds to them.

BELLEVUE 2035:
THE CITY WHERE YOU WANT TO BE

Bellevue welcomes the world. Our diversity is our strength. We embrace the future while respecting our past.

The seven strategic target areas identified in the Bellevue City Council Vision Priorities are:

ECONOMIC DEVELOPMENT
Bellevue business is global and local.

TRANSPORTATION AND MOBILITY
Transportation is both reliable and predictable. Mode choices are abundant and safe.

HIGH QUALITY BUILT AND NATURAL ENVIRONMENT
From a livable high-rise urban environment to large wooded lots in an equestrian setting, people can find exactly where they want to live and work.

BELLEVUE: GREAT PLACES WHERE YOU WANT TO BE
Bellevue is a place to be inspired by cuilture, entertainment, and nature.

REGIONAL LEADERSHIP AND INFLUENCE
Bellevue will lead, catalyze, and partner with our neighbors throughout the region.

ACHIEVING HUMAN POTENTIAL
Bellevue is caring community where all residents enjoy a high quality life.

HIGH PERFORMANCE GOVERNMENT
People are attracted to live here because they see that city government is well managed.

For more information please visit: https://bellevuewa.gov/city-government/city-council/council-vision

EXECUTIVE SUMMARY

In the computer-technology age, user-friendly design is increasingly important. Government websites are often the first point of contact between a city agency or department and the residents of a place. Thus, websites are key to cities making a positive first impression and to making it easier for people to access information and city services. For this project, the City of Bellevue engaged students to evaluate the user-friendliness of their current website, and to suggest user-centered improvements. Bellevue's goals were to characterize "personas," different types of users who regularly visit the City's website, and to use these "personas" to inform recommendations for the redesign of the City's website.

In order to identify areas for improvement, we interviewed and observed real people using Bellevue's website. We narrowed our focus to specific user-groups. To do this, we formed a set of initial personas, which helped us target particular subsets of Bellevue's population. These initial personas informed who we reached out to for interviews and observations.

Prior to determining who these personas would represent, we analyzed Google Analytics data related to website use. We looked out for the most-visited web pages and for the most searched-for words. This equipped us with insights about the top reasons people visit the City's website. With this information, we created four basic personas to represent people who commonly use the City's website:

> "Job Searching Jin"
>
> "Maia the Mom"
>
> "Thomas the Tourist"
>
> "Activity Seeking Anya"

This initial set of personas became the starting point from which we chose people to interview and observe. After conducting interviews and observing different people use the website, we revisited this original set of personas to compare similarities and differences and to refine them before designating a final set of personas.

Bellevue's goals were to characterize different types of users who regularly visit the City's website, and to use these "personas" to inform recommendations for the redesign of the City's website.
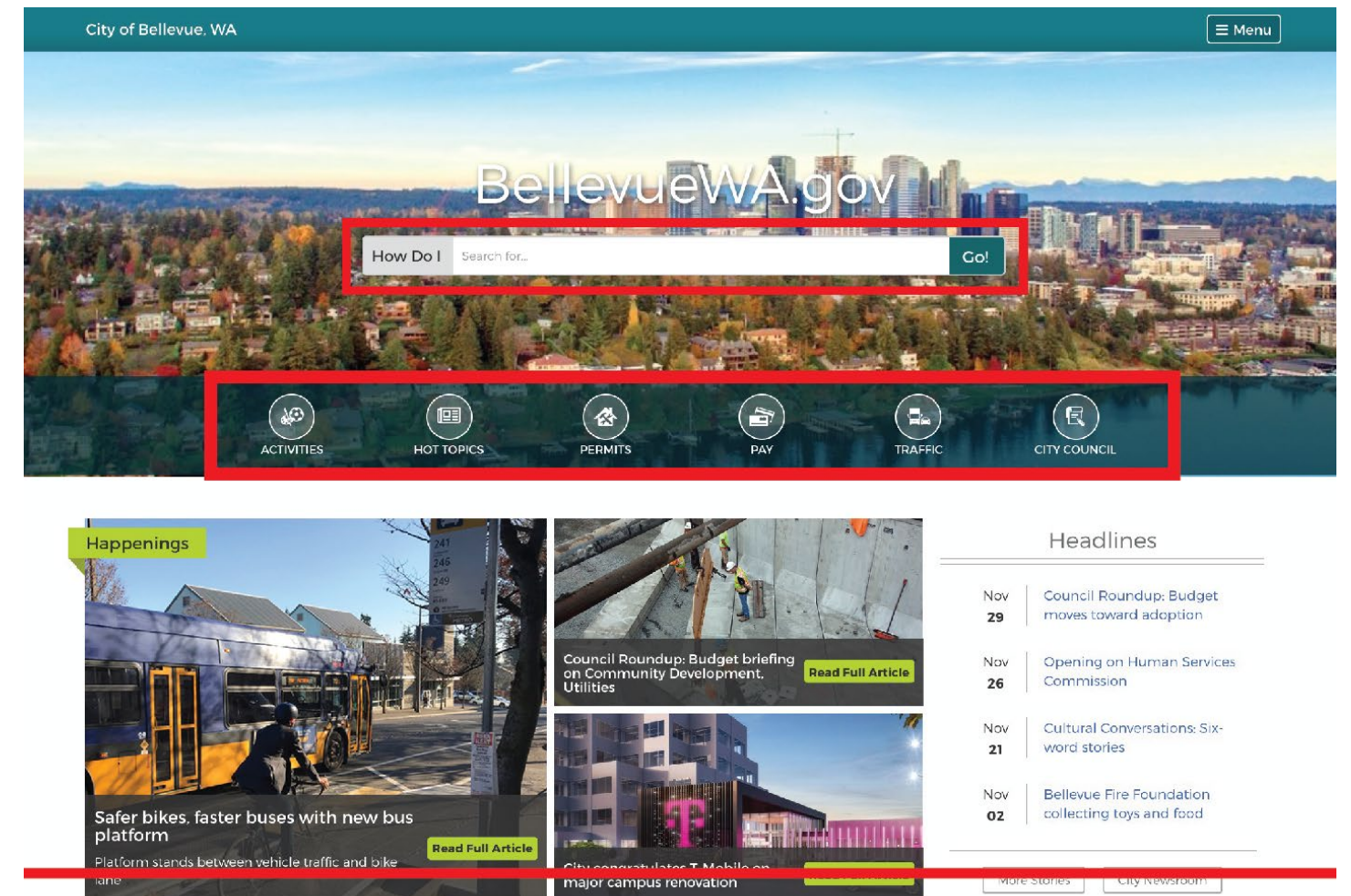

Writer Douglas J. Esser interviewing Bellevue IT Manager Enzhou Wang about the project process and results. From left to right Douglas J. Esser, Rutuja Nehra, Enzhou Wang, Angela Birchman, Yin Yin, and Jeff Oh. TERI THOMSON RANDALL.

The red markings on the home page of the website to the right are target areas we focused on in our work. The red line across the middle of the page is the "fold" of the home page. Everything above the fold (on a desktop) is what users can see when they first land on the City's home page, prior to any scrolling or clicking. We also paid attention to the main menu icons and to the large search bar to see which of these people preferred to use to navigate the website.

The most common topics users searched for and clicked on had little to do with anything below the centered search bar and menu icons. Information that is currently available to users ranges from being extremely vague to strikingly specific. This range tended to confuse us as well as our interview participants.

With research and data backing up our personas and analysis, this project seeks to build on Bellevue's user-centered design and improve the usability of the public website. Our main proposals for the City of Bellevue involve reorganizing the content of its home page to reflect the main reasons people land on their website, and to make better use of the space above the "fold" of the home page. We created two mockups of a home page, focused on maximizing usage of the space above the "fold." This required us to decrease the size of the search engine bar, to create a response-carousel of images that represent specific events occurring each day, and to organize the calendar of events to match popular topics.

The City of Bellevue's current home page with our team's focus areas highlighted in red.

This project seeks to build on Bellevue's user-centered design and improve the usability of the public website for the City of Bellevue.

KEY OBSERVATIONS

After creating our personas and completing interviews, we set out to redesign the home page of the City of Bellevue's website. Based on results from our interviews, we identified specific aspects of the website that could improve its user-friendliness. Our two primary findings are listed below:

1. There is little traffic below the "fold" of the home page.
2. There are major differences between what the user expects while navigating the website and what the website provides.

INTRODUCTION

The City of Bellevue stands out as one of the most diverse and affluent cities in the State of Washington. Much of its social diversity and economic success can be attributed to the level of educational attainment of its residents and to the types of employment it offers people. Bellevue provides employment opportunities in some of the highest paying job sectors: management, business, science and arts (US Census Bureau 2018). Demonstrative of the sort of employment Bellevue offers, the average household income in Bellevue is $120,000 a year (US Census Bureau 2018). Bellevue is also among the most highly educated cities in the State of Washington, with 68% of its population holding a Bachelor's Degree or higher (US Census Bureau 2018). The city's diversity is also notable and continuously increasing. According to the US Census Bureau (2018), Bellevue ranks 11th in the United States for the percentage of total population who identify as Asian (for cities with 100,000 people or more).

The City of Bellevue's official mission statement is to "continually strive to be a leader in innovation and collaboration and to care for the public's interest while advancing its community towards the future" (City of Bellevue 1999). Bellevue expands on this mission in its goal to be "conscious in making sure the resources they put forth to their residents are helpful, easy to use, and focused on their needs" (City of Belleveu 1999). One of the resources Bellevue provides to the public is its website. To create a website that supports the city's diversity and promotes inclusion of all, the website must be easy for people of diverse demographics to use. Ensuring this level of user-friendliness is no easy task. In the time we took to complete this project, we aimed to analyze the City's current website and to discover ways to incorporate a more user-centered approach. We wanted to learn how people of different ages, genders, races, and cultures now use the website, as this would reveal ways to improve their user-experience. This approach to research and design, centered around users and creating better products for them, is called Human Centered Interaction (Zimmerman, et al. 2007).

The challenge we faced was in designating only a few user profiles to represent Bellevue's incredible diversity.

Human Centered Interaction (HCI), also referred to as research-oriented design, is the practice of creating a product that focuses on the need or needs of the product's intended users (Zimmerman 2007). Our team employed this approach in our evaluation of the City of Bellevue's website. To modify the City's entire website so that it corresponds to residents' wants and needs, we sought to identify particular needs and to pair them with specific user profiles. The challenge we faced was in designating only a few user profiles to represent Bellevue's incredible diversity. This urged us to dive deep into research to determine the key target groups who make use of the website, as well as reasons they make use of the website and what compels them to return to the website. We also wanted to determine ways their user-experience could be improved. After collecting this information, we formed a set of conclusions related to ways the City of Bellevue can increase the user-friendliness of its website.

METHODS

Provided to us by the City of Bellevue, Google Analytics data allowed us to view the ways in which people make use of the website, as well as the most searched-for pages and key words. Because the website is dynamic and changes frequently, we focused most of our research on data during the month of October. By narrowing our scope to one month, we could determine specific reasons people visited the website. We were less concerned with what trended on the website during this time, and more concerned with how users navigated the website to access key content. We were also interested in finding out about the characteristics of the people generally searching for that content, and how we could use those identity markers to form a set of initial personas to direct us in our interview process.

Another of our goals from analyzing this data was to come up with specific tasks for interviewees to complete. We generated eight tasks, each related to a commonly visited page or to a key search-word used during the month of October. These tasks would allow us to observe and analyze how people interact with the website, and would indicate areas for the City to improve its website.

After we created tasks for interview participants, we decided on the groups of people we wanted to interview. With limited time and a large population to draw from, we returned to Google Analytics data to look for emerging patterns. We also analyzed a demographic source provided to our team by the City of Bellevue. In analyzing the City's demographics data, we looked out for significant, growing, and overlooked subsets of the population. We considered significant, growing, and potentially overlooked groups to be those that would primarily benefit from the website's updates. Although we selected three subsets of the population, we still wanted to account for as much as the city's total population as possible.

With two months to conduct interviews and produce a set of recommendations for the City of Bellevue, we brainstormed as many user profiles and reasons for visiting the website as we could imagine. This approach helped us to consider more potential users and informed the personas we created. However, we realize also that this method is limited. For example, we mainly considered Google Analytics data during one month: October. This data likely does not capture all people who make use of the website over the course of a year. We also acknowledge that there are most likely several, if not hundreds or thousands, of types of people and reasons why people might access the website not accounted for in our work.

## NUMBER OF PEOPLE VISITING THE WEBSITE BY DAY OF THE MONTH
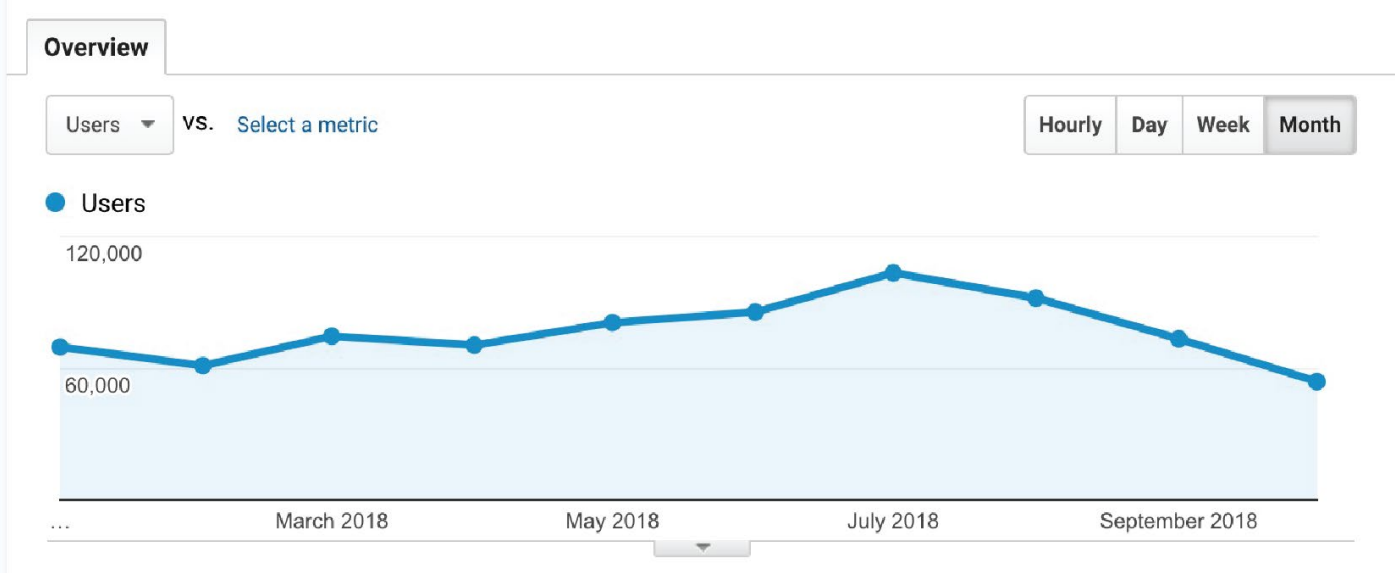
We observed that many of the pages most frequented related to extracurricular activities, utilities, and police.

GOOGLE ANALYTICS

Google Analytics data for the City of Bellevue's website was useful to us in our research. Google Analytics is a free tool which allows one to analyze website traffic, as well as general visitor statistics. Google Analytics calculates the number of times users click on a web page, and how many times a web page is landed as a result of a web search. We considered two categories, the top landing pages and the top pages visited, to be especially useful in assessing user patterns for the City's website. While limiting our focus to the month of October, we observed that many of the pages most frequented related to extracurricular activities, utilities, and police. This finding helped us determine our target audiences and our generation of personas.

WHEN DO PEOPLE VISIT THE SITE?
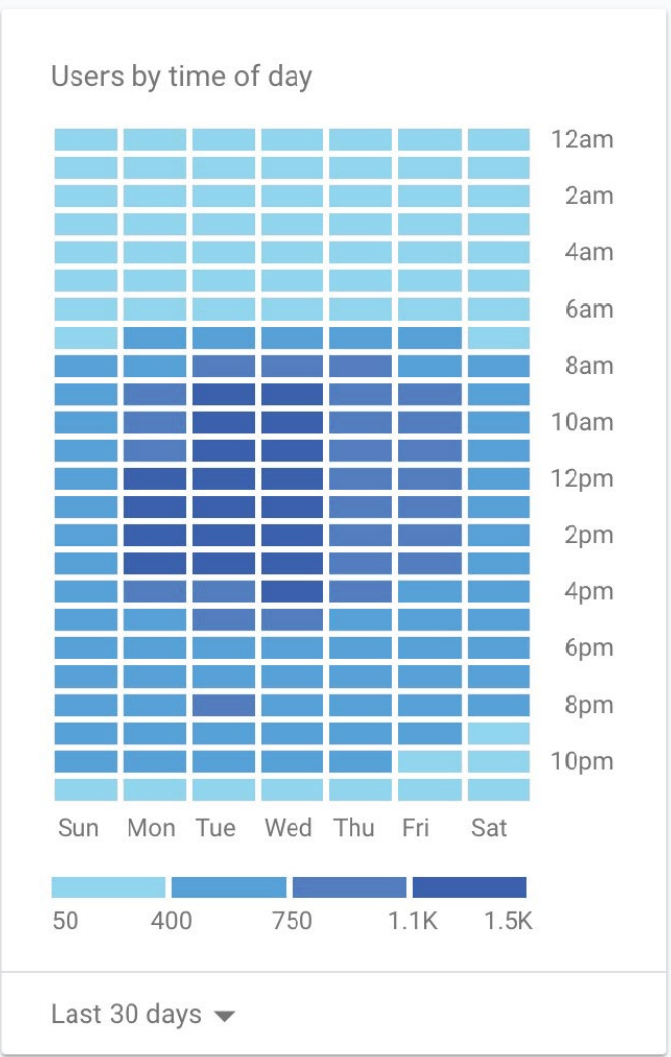
Another important aspect of Google Analytics data is that it provides real-time information related to people using a website. It also shows the times and days of the week that are most popular to users. We found that the people who visit Bellevue's website most often do so toward the beginning or end of the week (Sunday/Monday and Friday/Saturday), between 8:00 a.m. and 2:00 p.m.

While we found the Google Analytics function which calculates top 10 most searched-for words useful, we quickly realized that this data was also case sensitive. For example, if users insert the search words "jobs" and "Jobs," Google Analytics, by default, distinguishes those as two separate search words. One interesting finding, which resulted from our analysis of this data, was that four out of the top 10 most popular search words related to finding jobs, yet the website's "Job Opportunities" page did not show up on any of the top 10 most visited pages. Because of the volume of content on the website and public interest, Bellevue made Search most prominent to maximize efficiency for users. Since the "Job Opportunities" page is nested within other pages of the website, users are more likely to use the search bar than to navigate directly to the "Job Opportunities" page. It is also worth mentioning that the Career link is not prominent on the home page for users to find.

The top 10 most visited pages and the top 10 most searched-for words are key pieces of data our team used to analyze Bellevue's website. With the top 10 pages visited, we concerned ourselves less with the specific content users searched for, and focused instead on how people used the website to navigate to these commonly visited pages. While Google Analytics revealed to us pathways for how users navigate to certain pages, we found these pathways confusing to review since there appeared to be several dozen, if not hundreds, of different ways users land on a given page. With more time, it would have been interesting to analyze this data further to see how users navigate to each page, and to compare that with how the people we interviewed navigated to each page. We were also interested in the relationship between the top 10 search words and the information shown on the home page, specifically regarding topics related to "jobs." Eventually, when we recommended updates to the home page, we took commonly searched words and found ways to incorporate them on the home page.

Users by time of day

Sun	Mon	Tue	Wed	Thu	Fri	Sat	

12am
2am
4am
6am
8am
10am
12pm
2pm
4pm
6pm
8pm
10pm

50   400   750   1.1K   1.5K

Last 30 days ▾

TOP 10 PAGES VISITED
(DURING THE MONTH OF OCTOBER, 2018)

1. bellevuewa.gov/search_results
2. parks.bellevuewa.gov/community-centers/kelsey-creek-farm
3. police.bellevuewa.gov/
4. development.bellevuewa.gov/permits-and-inspections
5. utilities.bellevuewa.gov/pay-your-utility-bill
6. parks.bellevuewa.gov/community-centers/sbcc
7. parks.bellevuewa.gov/sports-and-athletics/bellevue-aquatic-center
8. utilities.bellevuewa.gov/
9. parks.bellevuewa.gov/connections
10. development.bellevuewa.gov/zoning-and-land-use

TOP 10 SEARCH WORDS
(DURING THE MONTH OF OCTOBER, 2018)

1. jobs
2. Business Licenses
3. Job Opportunities
4. staff directory
5. summer camp
6. Robinswood Tennis Center Programs and Fees
7. Jobs
8. business license
9. Robinswood Tennis Center
10. Jobs and Volunteer Opportunities

Note: The Google Analytics search function is case sensitive; accordingly, our "Top 10 Search Words" represent search words/phrases exactly as they are typed.

After analyzing the website's Google Analytics data and identifying the most visited pages and what users commonly searched for, we created four generalized personas:

- **"Job Searching Jin"** – Individuals looking for a job
- **"Maia the Mom"** - Parents looking for extracurricular activities for their children
- **"Thomas the Tourist"** – Short-term visitors looking for things to do in and around Bellevue
- **"Activity Seeking Anya"** – Residents of Bellevue looking for new activities to participate in

SUMMARIZING DEMOGRAPHICS AND DETERMINING TARGET GROUPS

Next, we analyzed the demographics of Bellevue to determine target groups to guide us creating an initial set of personas and in selecting interview participants. We wanted to cover as much as the population of Bellevue as we could, while also focusing on unique population trends. Since building a user-friendly website is all about knowing your users, we also wanted to see if there were any demographic groups at risk of being overlooked.

According to *The Changing Face of Bellevue - Latest Information on Bellevue's Demographics* (US Census Bureau 2017), Bellevue's largest job markets consist of management, business, and science and arts, with information technology standing out as one of the most prominent industry fields. Almost 40% of Bellevue's population is represented by people between the ages of 18 and 44; this age range, which is often referred to as the "young workforce" is the city's largest age demographic. In view of this age range's role in shaping Bellevue's future and in contributing to the city's growing tech industry, our team chose the "young workforce" as one of our target groups.

Our team found that the largest demographic group within the "young workforce" category identified as Asian, representing 41% of this demographic group alone. Taken as a whole city, Bellevue's Asian populations comprise 34% of its entire population. This surpasses the percentage of Asian populations of in any other city in Washington State, and is nearly six times the national Asian percentage. In the United States, among cities with more than 100,000 residents, Bellevue ranks #11 for the percentage of total population who identify as Asian. Expanding on

observations related to Bellevue's Asian populations, we noted that the city's Chinese population has grown by three times over the last 27 years. This represents the greatest population growth among Asian populations of Bellevue. Chinese is also the most spoken language in Bellevue households, after English. In view of the Chinese population's trending growth, we chose Chinese residents as another target group.
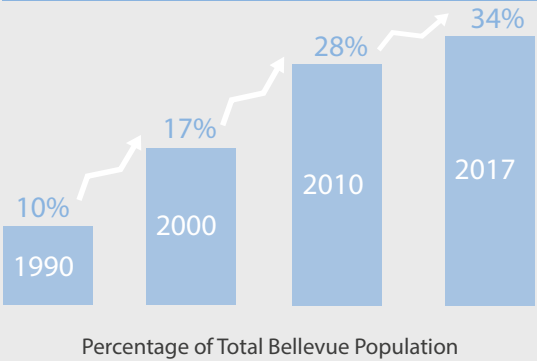
In selecting the "young workforce" as a target group, our team chose a group which encompassed a significant portion of Bellevue's population. In selecting the city's Chinese population, we chose an ethnic group whose population is increasing. We wanted to select a third target group to represent people potentially at risk of being overlooked. For this, we chose people aged 65 and older. Even though this group represents the city's smallest age demographic, with only 14% of the city's population fitting into it, compared to other major cities in Washington state, Bellevue is home to proportionally more older adults. We decided to select the 65 and older age category as our third target group because we wanted to see how well older adults can navigate and make use of the current website.

Among cities in the US with more than 100,000 residents, Bellevue ranks #11 for the percentage of total population who identify as Asian.
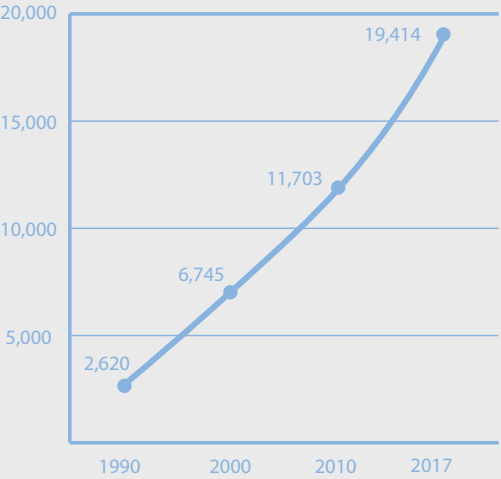
ASIAN POPULATION TRENDS IN BELLEVUE

#11 in US for
Percentage of Total Population
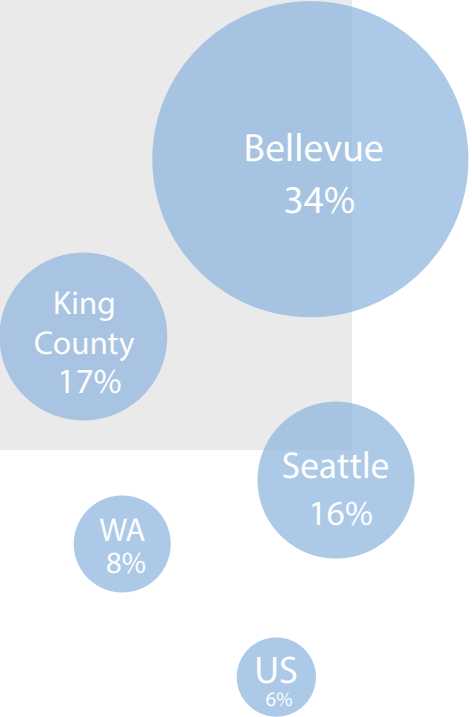Out of cities with 100k people or more

Three-Fold Increase in Percentage of Total Population Since 1990

Percentage of Total Bellevue Population

- 10% 1990
- 17% 2000
- 28% 2010
- 34% 2017

Chinese Population, 1990 – 2017

- 2,620 (1990)
- 6,745 (2000)
- 11,703 (2010)
- 19,414 (2017)

Percentage of Asian Population, 2017

- Bellevue 34%
- King County 17%
- Seattle 16%
- WA 8%
- US 6%

Data Sources: US Census Bureau 1990, 2000, 2010; American Community Survey, 2017 GRAPHIC DESIGN: LCY STUDENT TEAM

INTERVIEWING TARGET GROUPS

After analyzing Google Analytics data for Bellevue's website and reviewing the City's demographics information, we selected interview participants who represented the three target groups. To summarize, we present a list of our target groups below with the reasons we selected them. Pieces of our rationale reflect findings from preliminary Google Analytics and demographic data research, while other bits reflect reasoning we inferred and sought to test during our interviews and observations.

Young Workforce

- Largest age group
- Potentially very tech savvy, may give a detailed insight into website usage
- Makes up the major tech industries in Bellevue

Chinese Residents

- Fastest growing Asian population
- Chinese is the second most spoken language in Bellevue households. Do bilingual residents struggle to use the website in unexpected ways?

65 and Older

- Potentially more active and interested in City events since most would be retired
- May be underrepresented in terms of accommodation/user-friendly interface
- Provides insight into how user-friendly the website is to people who may be less tech-savvy

Our team also created a series of tasks for interview participants. A majority of these tasks referred to top visited pages and to top key search words. However, our team wanted to also test a theory we had related to the City's home page. We hypothesized that the large search bar in the middle of the home page's screen deters users from scrolling down to see what else the City presents on its home page. Thus, we created tasks to test whether this was so: we asked users to find information about certain topics that were "hidden" on the home page to see if users would scroll down and find them or use the search bar.

EIGHT TASKS FOR INTERVIEW PARTICIPANTS

1. **Imagine you are visiting Bellevue for the first time. Show us how you would use this website to find three activities to do this weekend.**
   Interviewer tasks: Write down where they click to find activities to do. Do they use the search bar? Do they click around the website? Ask them to describe the tasks they found after they finish.

2. **Imagine you need to pay your utility bill. Show us how you would use this website to do so.**
   Interviewer tasks: When they get to the "Pay Your Utility Bill" page, they have completed this task.

3. **Imagine you have children and are looking for activities for them to do after school. Show us how you would search for activities. Then, come up with three family-friendly activities the City of Bellevue offers.**
   Interviewer tasks: There are a few different ways they can complete this task. Write down what they typed in the search bar, what buttons they clicked, etc.

4. **Imagine you need to get a fire permit. How would you use this website to find out more about fire permits.**
   Interviewer tasks: When they get to the "Fire Permits" page, they have completed this task.

5. **Imagine you are interested in Bellevue's Community Centers. Show us how you would use this website to find out more about Community Centers.**
   Interviewer tasks: When they get to the "Community Centers" page, they have completed this task.

6. **Imagine you are interested in becoming a police officer. Show us how you would use this website to find out more about becoming a policy officer.**
   Interviewer tasks: When they get to the "Bellevue Police" page and click on the link that says "Become a Bellevue Police Officer," they have completed this task.

7. **Imagine you are looking for a job in Bellevue. Show us how you would use this website to find out more information about job openings.** *When they get to the "Job Openings" page, they have completed this task.*

8. **We are going to ask you to find some articles. Please show us what steps you would take to find these articles.**
   Interviewer tasks: DO NOT TELL THE PARTICIPANT THIS: All of these articles are somewhere on the home page. Write down whether they typed the names of the articles into the search bar at the top of the home page, or if they scrolled down to find them.

Due to time constraints of the academic quarter system, and our need to work efficiently to complete this project in a matter of weeks, we recruited interview participants from our established social networks who live or work in the Bellevue area. One of our team members reached out to a Chinese father in his thirties who works in Bellevue. Another team member reached out to two 20-year-old, Chinese-American friends who work in Bellevue. These individuals fulfilled both our "young workforce" and "Chinese residents" target groups. Another team member knew an older Caucasian couple who could fulfil our third category of "65 and older residents."

We conducted our first interviews with *Su and *Kenny at a local community church cafeteria. Su and Kenny are young, college-aged students of Chinese-American descent. Like many millennials could, they easily completed all eight tasks and successfully navigated the website without much hassle. They resorted to using the search bar only when scrolling on the home page took longer than a few seconds. They appeared confident in their skills and comfortable with the basic layout of the website. This was the case even though neither of them had visited the website in the past.

Next, we interviewed a 30-year-old man named *Ian at a local Starbucks. Like Su and Kenny, Ian is Chinese-American. He is a family man, with a wife and a two-year-old daughter, who works at Microsoft as a designer. He also attends the University of Washington as a graduate student. He represented two of our target groups: young workforce and Chinese residents. He shared observations and critiques of the website, likely guided by his designer point of view. While he navigated the website, he pointed out features he liked and disliked and explained why. He thought that certain icons and drop-down menus could be implemented in a more user-friendly way, and he suggested distinguishing activities and events on the home page more clearly: "Why not use different colors depending on functionality? Like [things related to] activities [could be] red...Use color as a way to [have] better navigation flow." Ian also pointed out that if images represented some of the city's upcoming events of the home page, it would provide people with a clearer sense of the event and possibly entice them to explore more of the City's offerings. Perhaps because English is his second language, at times, tasks confused Ian. We noticed it took him longer to finish certain tasks than it had taken Su and Kenny.

In our last interview session, we interviewed *James and *Sandy, an elderly Caucasian couple who live just outside of Bellevue, but who visit the city frequently. They invited us into their home for our session. Unlike the other interviewees, James and Sandy confessed to us right off the bat that they are not tech-savvy. Although they followed instructions without complaint, they exhibited clear difficulties in navigating the website. For example, at times James and Sandy required that the browser be reformatted in "enlarged text mode" to make the text legible. Once laid out in this way, some of the information became hidden from view, making it more difficult for them to see the contents of each page and complete the eight tasks. James and Sandy relied heavily on the search bar to complete many tasks. In fact, in five out of eight instances, the couple immediately began typing in the search bar, rather than looking elsewhere on the home page. This contrasted with the other interview participants who only used the search bar once or twice, and only after first glancing up and down along the home page.

*Participants names are changed to preserve anonymity.
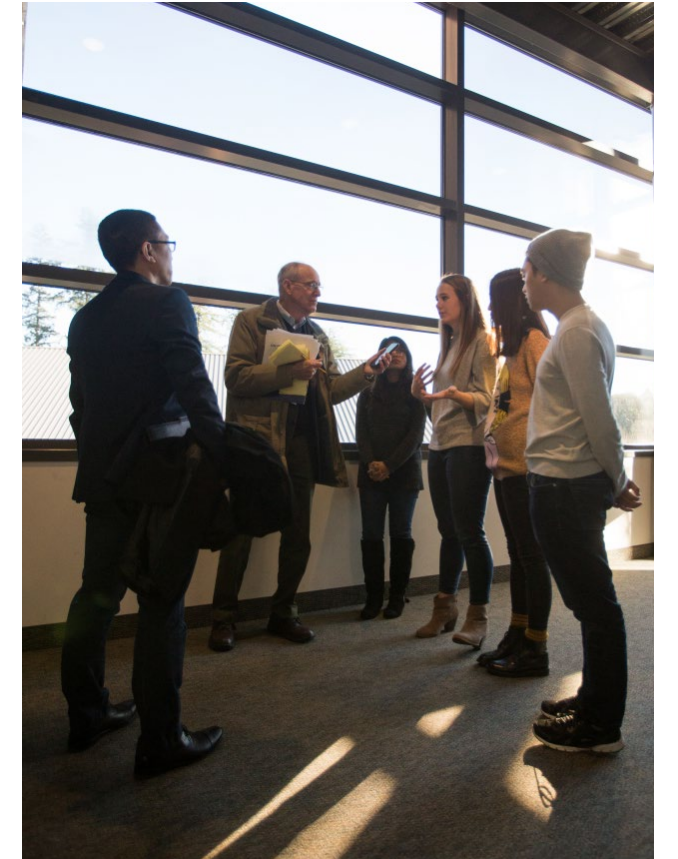
UW Bothell writer Douglas Esser interviews Project Lead Enzhou Wang and the LCY student team after their final presentation on December 5 at UW Bothell. From left to right Enzhou Wang, Douglas J. Esser, Rutuja Nehra, Angela Birchman, Yin Yin, and Jeff Oh.
TERI THOMSON RANDALL

CODING PROCESS

In analyzing the information we gathered during the interview process, we applied the practice of coding to help us identify key problems. Coding involves transcribing videos of interviews to look for emerging patterns related to key words and to subjects the participant repeatedly mentions. Since coding can be very time-consuming, we only coded one interview (Ian's). For all other interviews, we took detailed notes to further support our analysis and findings. The first step in the coding process required us to transcribe every sentence spoken during the interview, both words of the interviewer and of the participant. As we watched the videos, we also took notes on actions we observed taking place while each person spoke. We organized this data on Google Sheets. Below is a sample from our initial recorded data.

After transcribing the video, the next step was to identify significant behaviors and actions. To do this, we created a "coding standard," or, a set of guidelines which help highlight topics of conversation. We read through transcribed data to observe recurrent words and phrases. We reviewed the video recording several times to observe behavioral patterns, too. We noticed Ian referred to different design aspects of the website frequently, remarking on layout and flow. We also noticed he struggled to understand and complete certain tasks.

Our coding standards included:

- Note anything related to the design aspects of the website, specifically in buttons, icons, or images used
- Note anything related to the layout of site, such as how different sections or web pages are arranged
- Note anything related to how the participant navigated through the site
- Note any response that revealed a certain need that should be addressed
- Note anything related to confusion or to conducting the wrong action

After coming up with this set of coding standards, we coded the transcription from our interview with Ian, sentence by sentence. The code we generated is shown below.

The final step we took in this process was to group together all the coded words, phrases, and sentences in a separate document. This enabled us to compare participants' responses. To review this document, see Appendix 3.1.

ORIGINAL TRANSCRIPTION FROM INTERVIEWS

Time	Person Speaking	Sentence/Phrase	Notes
0:27:00	Jerry	Google news shows relevant topics, website events aren't relevant to me	Listed events aren't appealing or engaging
0:39:00	Jerry	Navigation structure... about us....	Navigational structure/content doesn't make sense in context
0:46:00	Jerry	Except the search title... there's only one actionable title... "more"	Jerry back on the HP looking at the navigational path for events
0:58:00	Jerry	Oh... But the term "more" is too vague for me	Jerry finds the news page but doesn't find it to be intuitive
1:33:00	Jerry	The calendar icons are similar	Having similar looking elements causes information to be easily dismissed
1:51:00	Jerry	I'm just quickly scanning the structures	Additionally explaining the lack of intuitiveness
2:15:00	Jerry	I didn't realize this whole section is about news	News & events blend together when page is quickly scanned
2:24:00	Jerry	If I go there, I can find that article easily	Opening "more stories" and browsing through city news
2:56:00	Jerry	Highlight the "see more" so the user can easily find the action	Button blends in too much and it difficult to notice amongst other content
3:22:00	Jeff	And you're talking about like the buttons below the pictures over there?	Jeff pointing to green buttons on pictures that stand out much more
3:35:00	Jerry	Put a button below all those sections	Pointing to each module and gesturing to put a see more button in each individual module
3:52:00	Jerry	Above the "see more," something brief	Describing putting a small, quick description of what it's directing to
4:15:00	Jeff	In your opinion, what information would you find on the HP of the website?	Additional line of questioning to get further input
4:48:00	Jerry	The first thing I would want to see on a government website would be a map	Answering question about HP
4:58:00	Jerry	Include all the facilities and parks, etc, so it's easily findable	Answering question about HP
5:15:00	Jerry	It would be nice to just navigate to a place near me using an interative map	Describing how he envisions the HP map would work (interactive over static image)

CODE WORDS USED TO MARK TRANSCRIPTION

Code Word	Description
#basic-info	Participant's basic information
#Bellevue	Any reference to the city of Bellevue
#clarification-from-interviewer	Anytime interviewer had to clarify a task or question
#community-center	Anytime participant referneced community centers
#design-buttons	Anytime participant mentioned anything related to "clicking," or commented on buttons/icons/links
#design-visual-info	Anytime participant described a visual problem on the website
#image-content	Anytime participant mentioned anything about images on the website
#layout	Anytime participant discussed the structure of information on the website
#navigation	Anytime participant described their process of how to finish a task or discussed the navigation of the website
#public	Anything participant mentioned anything related to the public (in relation to the city of Bellevue)
#unexpected-results/confusion	Anytime participant expressed frustration or unsurety about tasks/functions on the website

DATA VISUALIZATIONS

The visual to the right shows the distribution of our coded data. We created this visual based on how many times a particular theme emerged based on our coding of the interview transcription. Creating this graphic helped our team focus on the most frequently discussed topics. For example, we realized that Ian uttered the words "confusion" and "navigation" frequently as he completed the eight tasks. Findings like these guided us as we moved ahead into the redesign stages of this project.
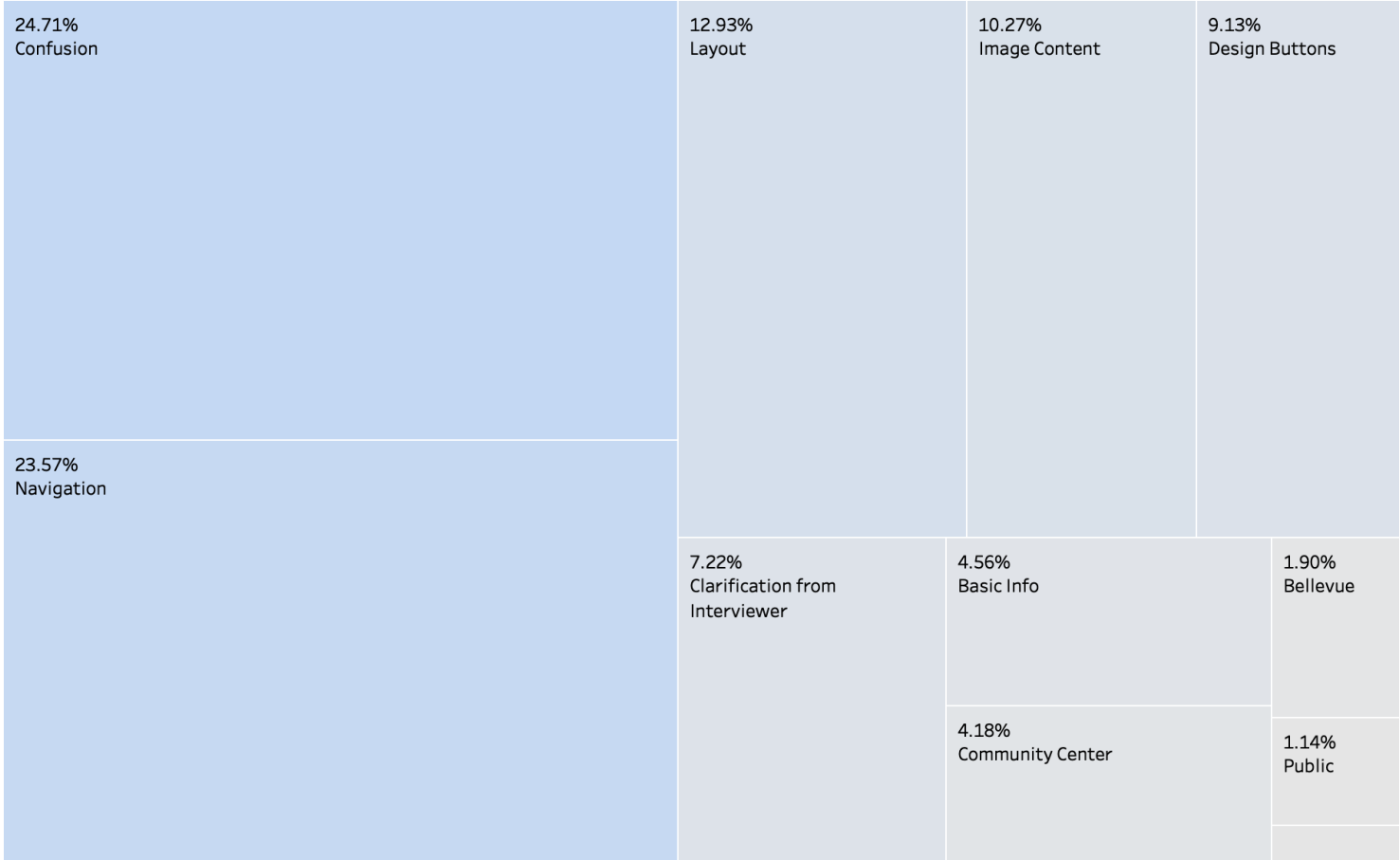
KEY FINDINGS

During our sessions with interview participants, we identified two general findings:

1. Less engagement with material presented below the "fold" of the home page
2. Incongruence between what the user expected and what the website provided

Currently, the home page consists of several different sections, with links to news articles and upcoming events in Bellevue. However, our review of Google Analytics data revealed that people infrequently click on the news articles and current events links. Notably, none of the news articles showed up in the lists we generated of the top 10 most visited pages or the top ten most searched for words. Thus, we found that the information and links the City shares on its home page do not always reflect primary reasons people visit its website.

Certain tabs and sections of the website prompt users to visit other websites or to sign-up for a subscription to view the content. One example of this is registering for swim lessons: there are several different pathways one could follow to sign a child up for swim lessons; yet, each pathway requires several steps, clicking through multiple pages, and transferring to different sites. The City's website does not offer a direct path for users to complete this single task. Rather, the City's website redirects users to an external site, set up with information related to different aquatic centers and services. Meanwhile, other links open to long, detailed pdf files. Further research would be required to determine how people react to encountering these long pdf files. However, the inconsistent experiences users now have in clicking on different links may cause confusion and irritation.

SUMMARY OF CODED DATA DISTRIBUTION

| 24.71% Confusion | 12.93% Layout | 10.27% Image Content | 9.13% Design Buttons |

| 23.57% Navigation | 7.22% Clarification from Interviewer | 4.56% Basic Info | 1.90% Bellevue |
| | | 4.18% Community Center | 1.14% Public |

LCY STUDENT TEAM

We found that the information and links the City shares on its home page do not always reflect primary reasons people visit its website.

We also detected differences in participants' use of the website based on their level of English proficiency. The City's website is set up almost entirely in English, although certain pages can be translated into other languages. Users more comfortable with English demonstrated greater capacity to understand each of the eight tasks. Because different participants' level of English proficiency varied, we found ourselves phrasing our questions differently to accommodate them. For example, with Ian, we spent time clarifying and re-phrasing many of our questions. There were times he did not know what we were asking him to search for, and so we had to take more time to describe the task. We found, especially during this interview, that words and topics that may be easy for English speakers to grasp may not be for people with limited English proficiency.

Another trend we detected related to the age of our participants. While we have not drawn from or produced quantitative evidence that supports definitive conclusions about the behavior of different demographic groups of Bellevue, we noticed that younger participants completed tasks more quickly, with greater ease. The youngest participants, Su and Kenny, navigated City's website without difficulty, clicking on related buttons and links, seeming to understand the website's layout. They used the search bar only as a last resort, after first trying to complete the task by clicking on links and scrolling around on different web pages. In contrast, the oldest participants we interviewed, James and Sandy, used the search bar at the top of the home page to attempt every single task. They never scrolled down to view additional information presented on a given web page. James and Sandy also admitted that they rarely use the internet, and that when they do it takes them a long time to navigate to complete their own tasks. We inferred from this statement that because James and Sandy seldom use the internet, and may not be as familiar with the general layout of websites, this likely explained their reliance on the search bar.

After completing our data analysis and summary of findings from the interview and coding process, we set out to create personas. We wanted to create personas with particular identities, with specific needs and wants. To come up with solid and credible persona options, we relied on a technique established by the user-experience consultant Tamara Adlin (Adlin 2018). We brainstormed reasons why different users would access the City's website, categorized different users into groups, and created "I need" and "I want" statements that would individualize each user as a persona.

LOST IN TRANSLATION

We noticed during our interview with Ian that non-native English speakers may not understand concepts even if they think they do, because so much meaning can be lost in translation from one language to another. Ian's native language is Chinese. While he speaks English quite well, clear misunderstandings caused him to feel frustrated and confused. For example, when we asked him to show us how he would find out more about Bellevue's community centers, he failed to complete this task. He also asked us why this task mattered. In chatting with him, we realized that to Ian, a "community center" meant something along the lines of a "residential center," or an apartment complex. He did not conceive of community centers as public spaces; rather, he thought of them as private residential areas, only accessible to the people living in them. Even though "Community Centers" appears as one of the most commonly visited pages on the City of Bellevue's website, we discovered this term's meaning may be unclear to many of non-native English speaking residents.

We brainstormed reasons why different users would access the City's website, categorized them into groups, and created "I need" and "I want" statements that would individualize each as a persona.

PERSONAS

The process of creating personas entailed four steps. First, we wrote down the City's goals, as a way to measure the success of our project. We also thought of who would constitute a user and drafted descriptions related different users by broad category of need and desire. We organized this work using sticky notes.

The second step was to pair each specific user with a reason they would access the City's website. For example, we considered "parents" as users and paired them with the reason, "looking for after-school activities for my children." Each of us spent time brainstorming our own conceptions of different users as well as reasons they would visit the website, and then we shared our ideas as a team.

Thirdly, we categorized user-reasons into similar groups. After organizing user-reasons in groups, we created "I need" and "I want" statements to summarize each group. For example, we created a group with the following three user-reasons:

- A Chinese mom who wants to pay her utility bill online
- A new immigrant family looking for home-owners insurance
- A driver who needs to renew his driver's license

The "I need" and "I want" statements we came up with to summarize each group are presented below.

- I need to take care of my utilities.
- I need after-school child care for my children.
- I want to do something fun this weekend.
- I want to find a job.

From these four "I need" and "I want" categories, we narrowed our focus to specific personas. We used demographics information to make variations on each, such as having one persona be Asian and another Caucasian. After engaging this four-step process, we drafted each persona.

We created a set of personas before and during the interviewing process. This way, we had more time to consider them and to make changes based on findings from the interview process. We expected that our original personas would need only minor revisions. For example, in our first iteration, all personas ranged in ages between 20 and 35. Problematically, all of these personas fell in the "young workforce" target group. In our final iteration, we changed Stacy's persona to represent the older adult age range of James and Sandy, as well as the challenges we observed these participants faced in navigating the website. Two of our personas came accompanied by user case scenarios in their second iterations. These stories illustrate specific situations and reasons different users would need or want to access the City's website.
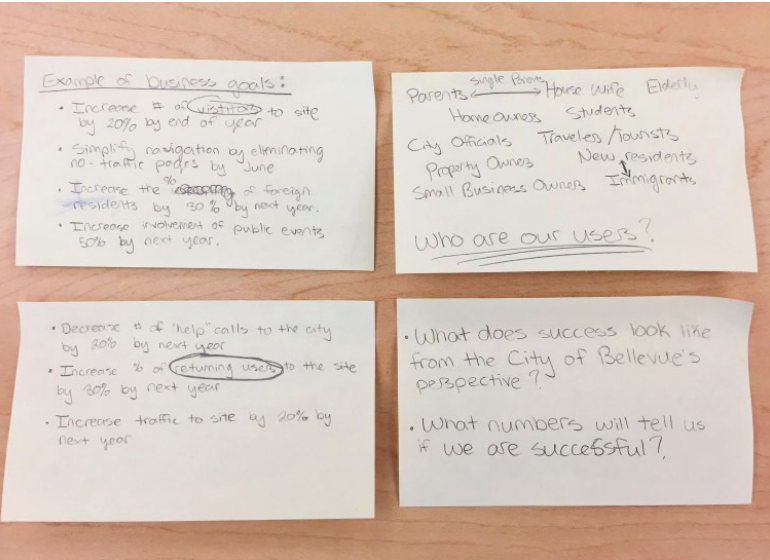
First step in creating personas: writing down the goals of the City of Bellevue and its website. LCY STUDENT TEAM
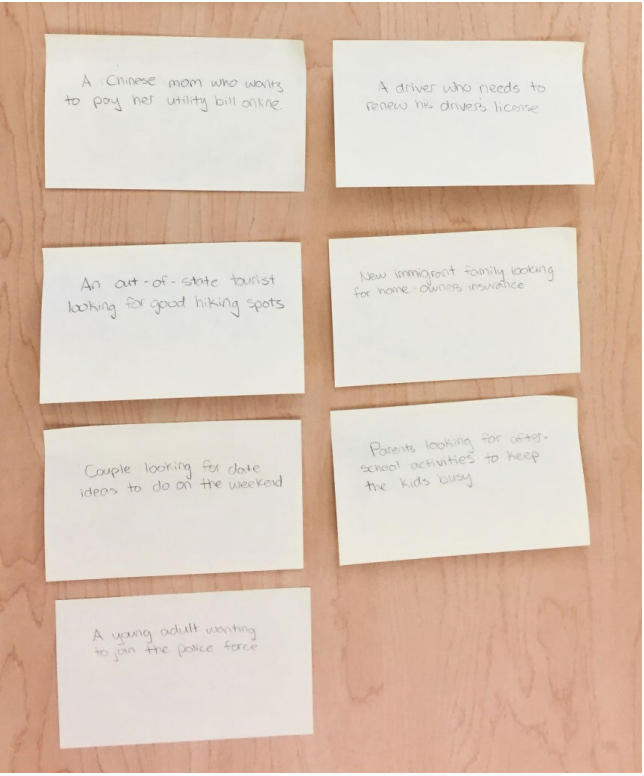
Second step in creating personas: pairing users with specific needs. LCY STUDENT TEAM
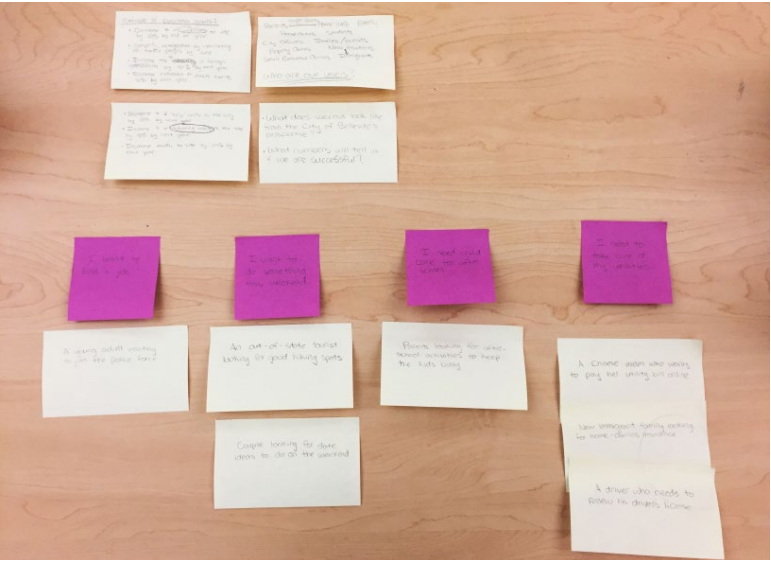
Third step in creating personas: finalize "want"/"need" statements. LCY STUDENT TEAM
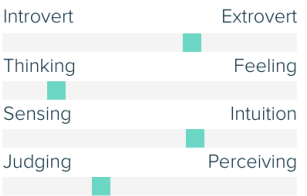
Ajit Chopra

Ambitious Outgoing Resourceful
Tech Savvy

"It is the exchange of ideas that propels us forward. Nothing can ever truly be achieved alone."

Age: 45
Work: Software Engineer
Family: Married, 1 kid under 10
Location: Bellevue, Washington
Ethnicity: Asian Indian
Language(s): Hindi, Punjabi, English

Personality

Introvert		Extrovert
Thinking		Feeling
Sensing		Intuition
Judging		Perceiving

Bio

Ajit was born and raised in Patiala, India where he completed his education and earned a Masters in Software Engineering. Ajit moved to Washington 12 years ago after receiving a job opportunity at Microsoft and has been here ever since. He earned his citizenship status a few years ago and is a recent homeowner. He greatly believes in building your own fortune and thus bought a fixer-upper for his first house to work on as his first big DIY fix up project.
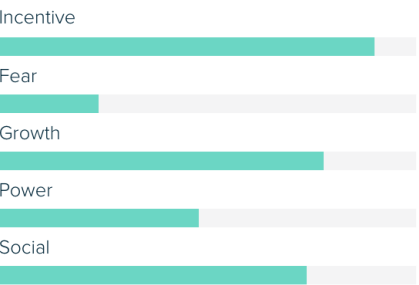
Goals

- Fix up his new house from changing wiring to getting rid of overgrown trees in his backyard.
- Finding good after-school programs for his kid since both him and his wife work.
- Get involved with his community and participate in local events.
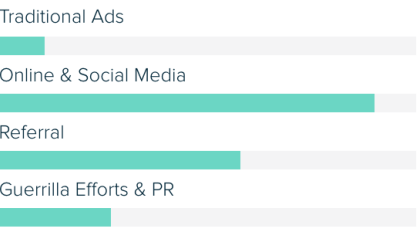
Frustrations

- There are many different permits that need to be filled out for different things for fixing up his home but he's not entirely sure of the correct procedure since it's his first time.
- It's hard to know about current events beforehand to plan them out since he doesn't find out about them till the last minute.
- Feels that there need to be more engaging after-school programs that encourage play outside but is also worried about safety.

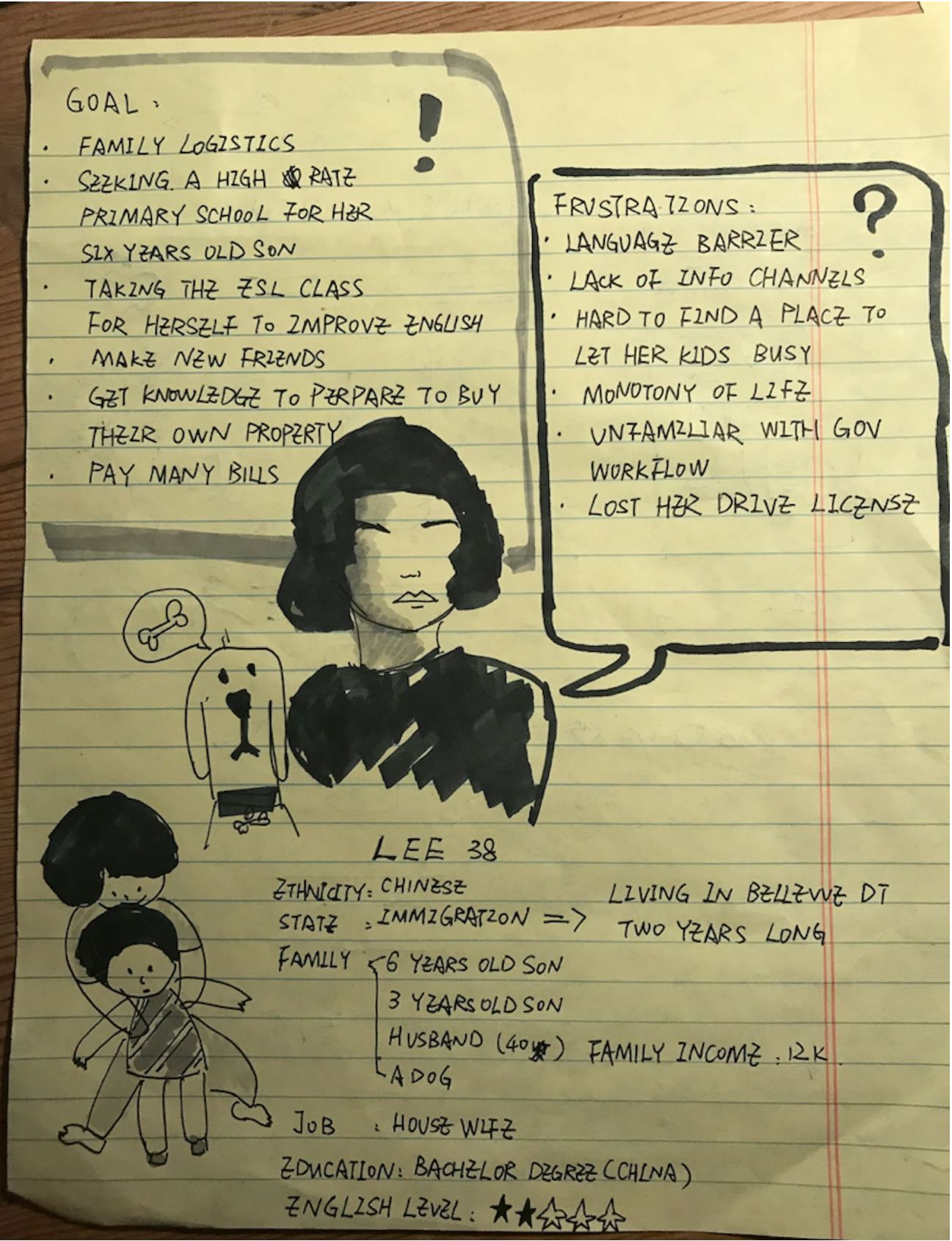### Motivation

Incentive
Fear
Growth
Power
Social

Preferred Channels

Traditional Ads
Online & Social Media
Referral
Guerrilla Efforts & PR

First iteration of persona ideas LCY STUDENT TEAM

First iteration of persona ideas LCY STUDENT TEAM

Stacey

| Caring | Strict | Genuine |
| Driven | Enthusiastic | |

"Always do your best. What you plant now, you will harvest later."

Age: 38
Work: Stay at home mom
Family: Married
Location: Bellevue, WA
Ethnicity: Caucasian
Language(s) spoken: English

Personality

Introvert — Extrovert
Analytical — Creative
Conservative — Liberal
Passive — Active

Bio

Stacey was born and raised in Seattle, Washington. She moved to Bellevue when she got married 12 years ago. She has three children (ages 10, 8, and 5). Her oldest two children attend one of the local public schools, and she homeschools her youngest child in kindergarten. In her spare time she participates in community events, and is a part of several neighborhood facebook groups.

Goals

- Find ways for her children to get outside so they're not stuck at home after school
- Keep a tidy home and provide meals on the table every day
- Create a personal blog that showcases her love of cooking and home decor
- Travel to Asia

Frustrations

- Having her children stuck inside with nothing to do
- Not finding enough support in community events or outreach programs.
- Having a messy house
- Dealing with difficult parents who are unable to control their children
- Not having enough resources at her disposal to teach her kindergartener.

Motivation

Incentive
Fear
Achievement
Growth
Power
Social

Preferred Channels / Social Media

Facebook
Instagram
Pinterest
Email

Devices Used

- 50% iPhone
- 30% MacbookAir
- 10% Tablet
- 10% Apple Watch

First iteration of persona ideas LCY STUDENT TEAM

USER CASE SCENARIOS
THOMAS THE TOURIST

Thomas is an Indian-American who moved to Bellevue recently with his family. He received his bachelor's degree from a college in India, found a job about a year ago in Bellevue, and has been living here ever since. He is also married with one child, a daughter. His daughter is enrolled in preschool in the Lake Washington School District system.

Thomas prioritizes spending time with his family and looks for interesting family-friendly events taking place in Bellevue. He also plans to renovate his backyard, adding a playground for his daughter. Thomas visits the Bellevue. gov website and clicks on the activities button, visible under the search bar on the home page. Being a first generation, Indian-American, Thomas still experiences a slight language barrier and at times translation services would help him navigate the website. He finds translated pages provide more limited information compared to pages that appear in English.

About 30 minutes after initially landing on the City's website, Thomas finds some activities to do over the weekend with his family. With some extra time to spare, he checks out the permits tab for more information regarding his plans to alter his backyard. He finds himself rather confused as he links to a complex list of information related to permits.

THOMAS

Age: 37
Ethnicity: Asian
Marital Status: Married
Occupation: Designer
Languages: Punjabi/
                English

Pain Points
- too many different permits that need to be filled out
- hard to know about city events in advance
- difficult to find contact information for city officials for questions

Goals
- find new activities around town for family to engage in
- get involved in his community and participate in local events
- be able to get city land use information quickly & easily online

LCY STUDENT TEAM

MAIA THE MOM

Maia is a Chinese immigrant who moved to Bellevue with her husband 10 years ago. Maia takes her oldest child to school every day since her husband leaves early each morning for work. She also homeschools her youngest child, and is very proactive in coming up with after-school activities for both children. One morning, after returning home from taking her oldest child to school, Maia sets out to find an activity for them to do over the weekend. She remembers that a parent of one of her children's friends mentioned Kelsey Creek Farm as a great place to take kids. Maia searches for "Kelsey Creek Farm" on Google. A link directs her to the Kelsey Creek Farm home page on the City of Bellevue's website.

With many resources at her disposal, Maia still feels lost and confused as a result of her language barrier. She finds a Chinese-translated page on the website, which describes Bellevue's general activities. The page offers only basic information, with no links provided in Chinese. She resorts to reading about Kelsey Creek Farm in English and uses Google Translate to help her with unfamiliar words. One of the links Maia clicks on brings her to a 20-page-long pdf which describes in detail all the happenings at Kelsey Creek Farm. Nearly two hours later, and exhausted from translating between Chinese and English, Maia finally knows the times of activities that she and her children can participate in over the weekend.

Next, Maia needs to pay her household electricity bill. Maia neither trusts making online payments, nor feels comfortable talking on the phone in English. Often, Maia heads to Bellevue City Hall to pay in person, bringing along her youngest child. She feels nervous talking to government officials in English, but generally feels less confused than when she calls. Tasks like this one are very nerve-racking and emotionally taxing for Maia. She wants to improve her English so she will no longer face these barriers. For now, she wants to be able to talk with someone who has the patience and kindness to understand what she wants.

MAIA

Age: 38
Ethnicity: Asian
Marital Status: Married
Occupation: Housewife
Languages: Chinese/ English

Pain Points
- having her kids stuck inside with nothing to do
- not finding enough support from her community events
- language barrier
- not enough resources available to teach her kids
- lack of information channel
- unfamiliar with govt. workflow

Goals
- finding ways to keep her kids busy after school
- take an English learning class
- pay family bills
- seeking a high ranking primary school for her kids

LCY STUDENT TEAM

Above: Bellevue IT Manager Enzhou Wang (facing camera) discusses the website project with Interactive Media Design students at UW Bothell. TERI THOMSON RANDALL
Below: Bellevue IT Manager Enzhou Wang (standing, right) visits the BIMD 481 Integrative Studio class at UW Bothell to introduce the website project. Instructor Mark Chen is standing, center. TERI THOMSON RANDALL

HOME PAGE MOCKUPS

UPDATING CITY OF BELLEVUE'S HOME PAGE

Our team created two mockups of the City's home page. In each redesign, we explored different stylistic choices to address specific opportunities for improvement. We wanted to provide more than a single option for how the City's home page could be redesigned. We started from a blank slate with the creation of each mockup, loosely basing our redesigns on the City's current home page. We focused on rearranging certain elements to make a clearer, more user-friendly design.

Our first mockup distinguishes between the different events going on in Bellevue. It achieves this by dedicating distinct sections of the home page to different topics. This mockup also places commonly searched-for topics above the fold of the home page. Our second mockup explores the space above the fold of the home page in a more personalized manner. Images and titles change to match popular current events happening each day of the week. This mockup also distinguishes between the different events occurring in Bellevue, "tagging" key words to call attention to current events and activities.

The central goal for our first website redesign was to reduce the number of options users encounter right off the bat. We sought to create a simpler, more streamlined user experience. Applied to the website as a whole, this would require reducing the vast amounts of text present on certain pages, suggesting user needs related to various topics, and presenting a more image-based menu layout that can be deciphered at a glance, regardless of language fluency. However, with limited time to initiate our first draft mockups, we limited ourselves to only redesigning the home page.

On the landing page of our first mockup redesign is a familiar image of Bellevue's skyline and four menu options which address basic user needs which Google Analytics data revealed are among the most common reasons people access the City's website: Visit Bellevue (for visitors interested in sightseeing), Assess Property (for home improvement), Pay Bills (for utilities) and Apply for Jobs. These topics take up the space above the fold of the home page.

Right below the fold of the home page, is a familiar carousel-style "Upcoming Events" row section. This displays large images which represent upcoming events and activities in Bellevue. Right below the "Upcoming Events" carousel, we added a "News" carousel. This displays

A first mockup of a new home page for the City of Bellevue LCY STUDENT TEAM

Note: All pictures of City of Bellevue government officials and events in this section of the report are fictional and have served the purpose of creating website mockups. Real City of Bellevue government officials and events can be found by visiting the City's official government website at bellevuewa.gov. Full-size images of home page mockups can be found in Appendices 1 and 2.

updates from the City and other governmental information. These two carousels offer visual communication, which participants expressed is lacking from the City's current website. On the current website, weekly activities and news are clustered together in one "Happenings" section; in our mockup, we changed this so visitors of the website can discern between events and news.

At the bottom of our home page, requiring users to scroll down to view it, we include a basic staff directory for the Mayor and representatives of the City. Visitors can see headshots of each person as well as email and phone contact information for each City staff and representative.

Our second mockup of the website is a higher-fidelity version. We modified the content above the fold on the home page. The first thing a user sees when visiting a website is what compels them to continue to use the website (or not). Realizing this, we focused on how to draw users' attention and immediately engage with them. This mockup uses less space above the fold, directing users' attention to calendar events. The focal image relates to an event or activity occurring that day. From the first image shown, users can swipe through to view additional images and see what else is occurring later on in the week. Each image is accompanied by a brief description of the event. This feature takes the place of a dedicated "Happenings" section. Whereas the current website includes pictures and descriptions of events in its "Happenings" section, in our redesign we spotlight events on the home page so people immediately become aware of them. The second mockup also included an accessibility accessory. In designing this feature, we considered how we could make the website more user-friendly to vision-impaired and blind users.

Another aspect of the home page we decided to modify was the calendar. We wanted visitors to the website to view clearly events happening around the city, and so we added a picture for each calendar item. We also embedded color-coded tags. This redesign both arranges upcoming events to appropriate categories and alerts people to them. Our inspiration for this came from our interview with Ian, who expressed his interest in being able to more easily find activities to do with his young daughter. By creating the tag "kids" parents like Ian can click to view a list

of kid-friendly activities without having to scroll through all other events and activities. The same approach applies to many kinds of events and would help people to view the events that appeal to them.

In both mockups, we removed the large search bar at the top of the screen and repositioned it in the corner. This simple change will compel people to actually take a look at the content on the home page. From our interviews with James and Sandy, we realized certain segments of the population may still rely on the search bar tool; and so we kept it visible in the top right corner.

A mockup of a government official's section for the City of Bellevue website LCY STUDENT TEAM

CURRENT HOME PAGE AND "HAPPENINGS" SECTION ON THE CITY OF BELLEVUE'S WEBSITE
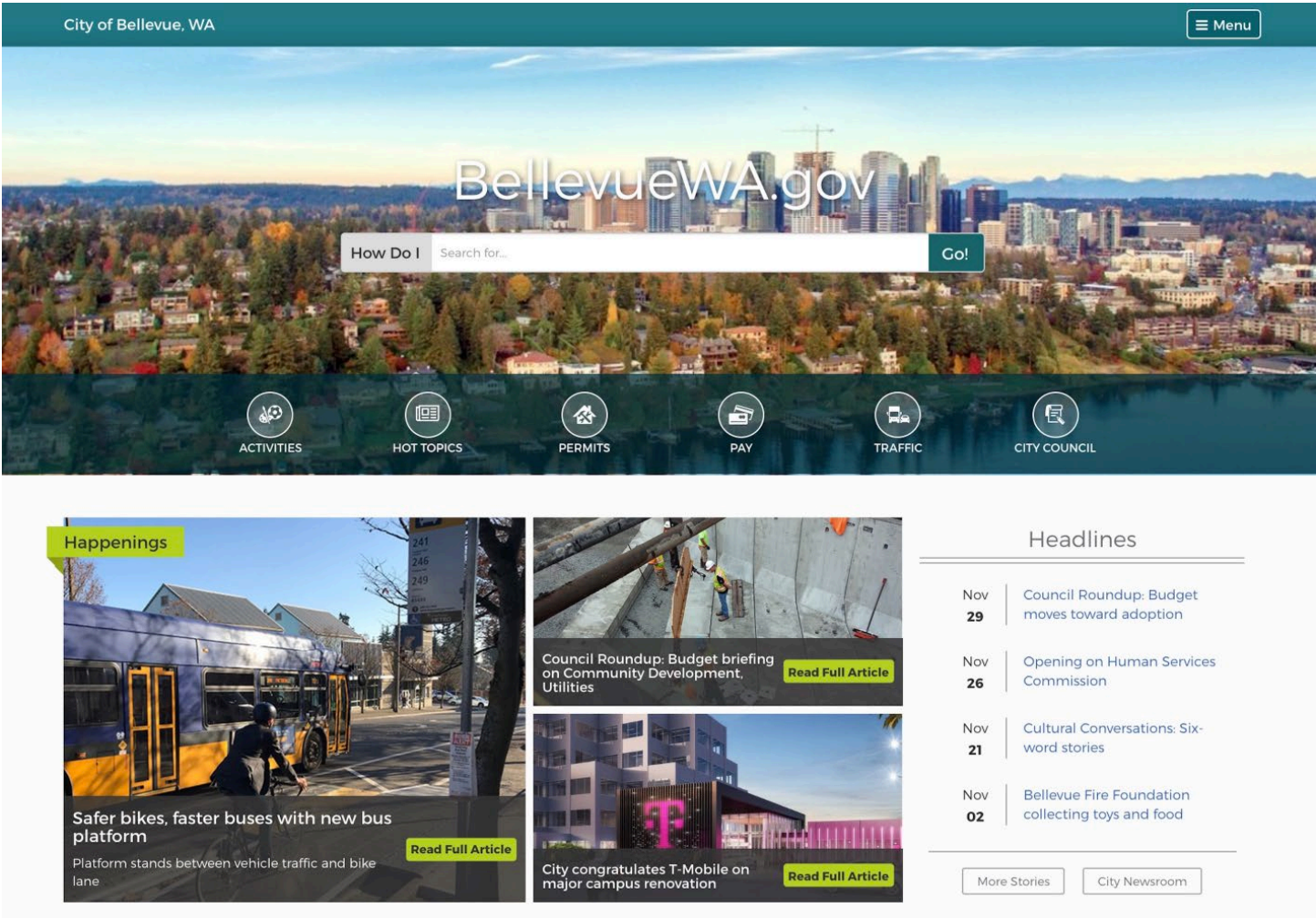
Current City of Bellevue home page CITY OF BELLEVUE

CITY OF BELLEVUE HOME PAGE MOCKUP
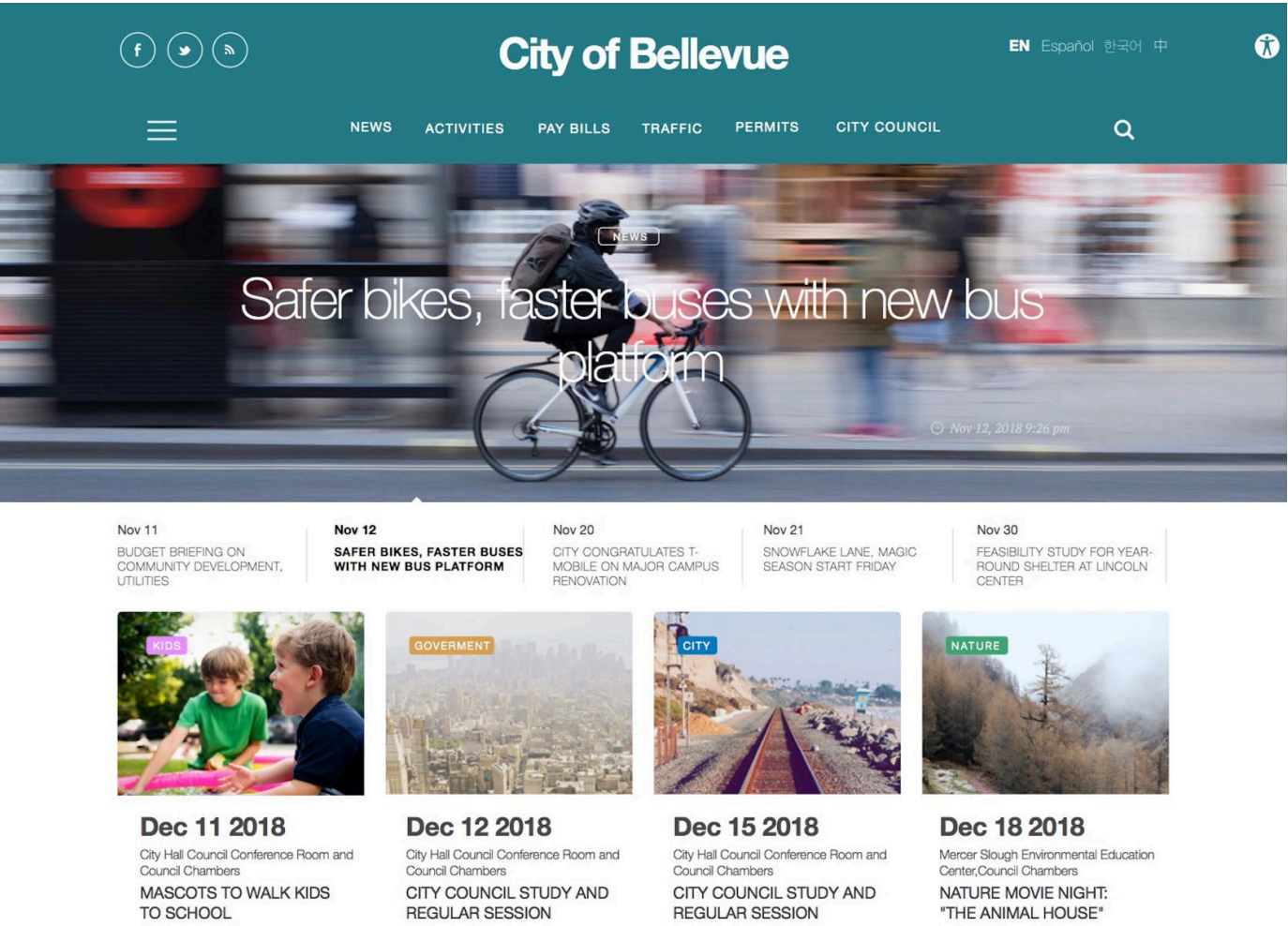
Second mockup for City of Bellevue home page LCY STUDENT TEAM

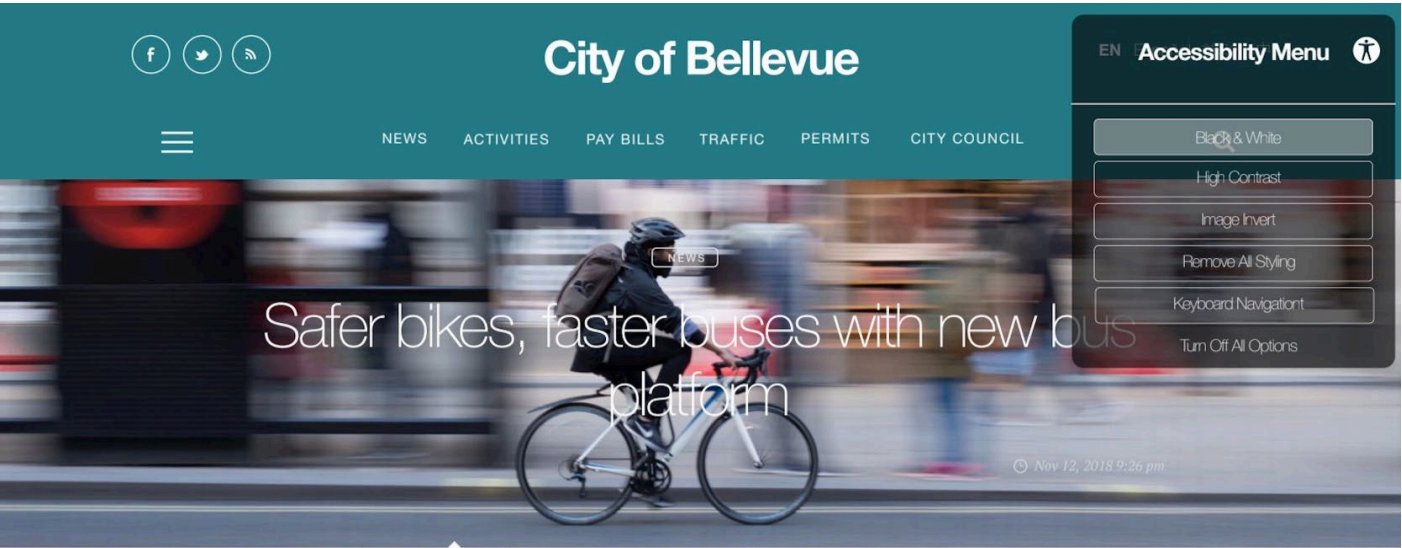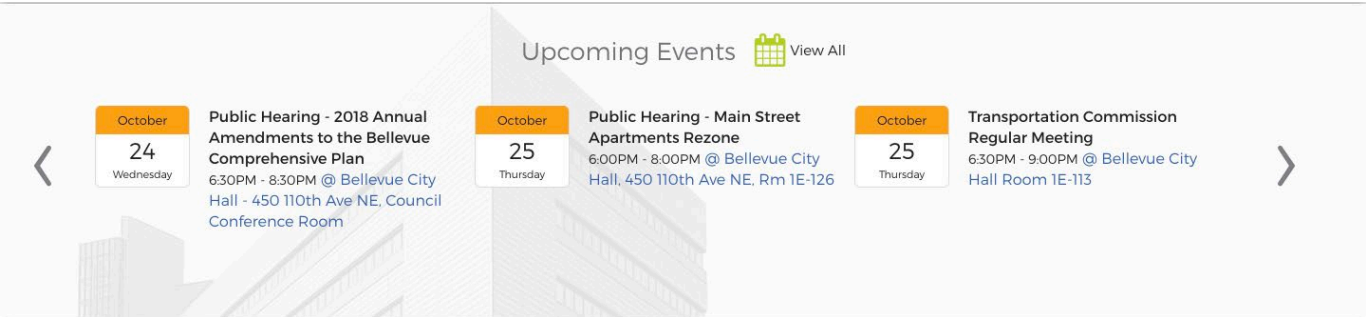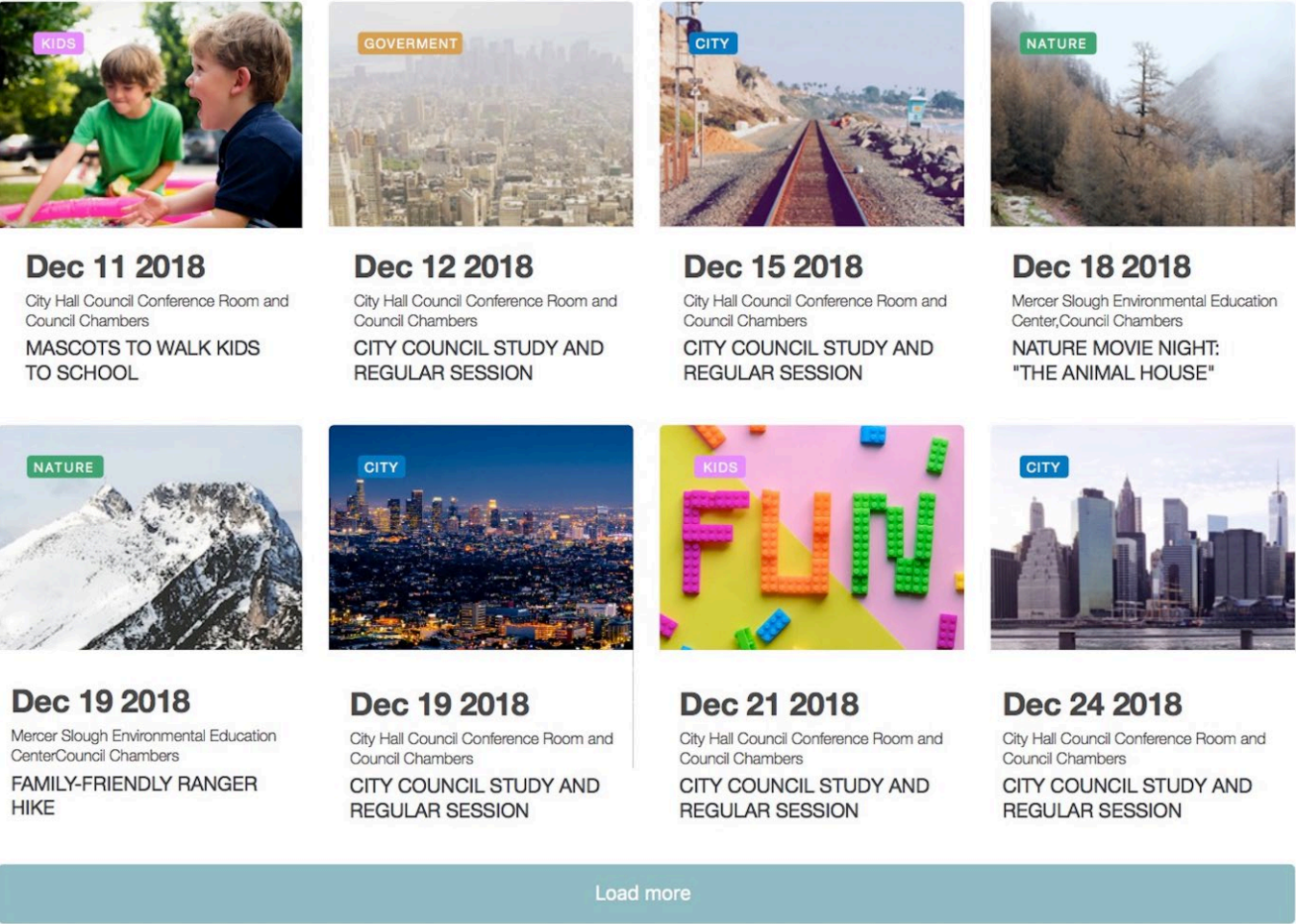*A mockup of an accessibility feature for the City of Bellevue website* LCY STUDENT TEAM

CURRENT SECTION ON THE CITY OF BELLEVUE'S HOME PAGE CALENDAR EVENTS

CITY OF BELLEVUE

OUR REDESIGN OF THE CALENDAR SECTION

LCY STUDENT TEAM

CONCLUSION

Given limited time to complete this project, we worked with only a handful of interviewees and focused primarily on updating the website's home page. This work could be expanded to include more users and more parts of the website. However, our updated home page is an important first step in creating a more user-friendly website.

The City of Bellevue could begin by implementing some of the design changes we indicated in our mockups. Since the home page leaves a lasting first impression on users, it is crucial that the information presented on it reflect the common needs and interests of users. A clearer display of activities and events could potentially compel more people to return to the City's website. Separating the City's events based on content, as in the first mockup, or applying coded tags, as in the second mockup, would help visitors immediately identify what they are looking at, even if their first language is not English. Accounting for disabled users is another key to creating a user-friendly website, and our team would like to have conducted more research on this topic. We suggest the City of Bellevue consider ways it can add or modify features to increase accessibility for more and different kinds of people.

The overarching goal which guided us throughout our study process and in designing both home page mockups was to create a more user-friendly experience. For users who are already comfortable with the layout and design of the current website, we believe our home page redesign maintains their standards of use. If any users felt confused by the new format of the website, the search function, which we preserved from the original website, could help acclimatize them to changes and retrain their navigation skills. For users who currently experience difficulty using the City's website, we expect that our redesign suggestions and mockups would meet their needs and enhance their experience using the City's website.
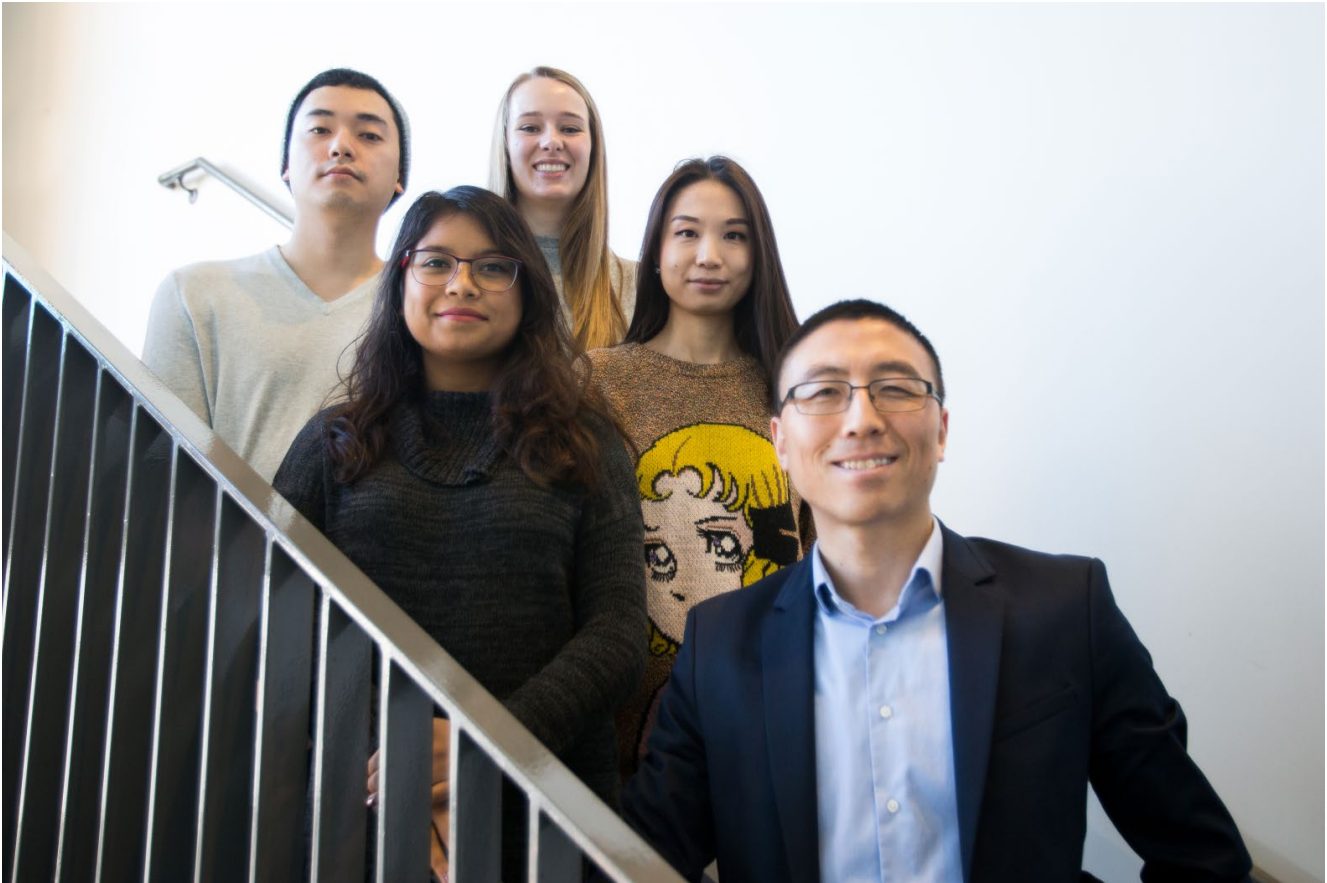
Students with Project Lead Enzhou Wang (from left to right: Jeffrey Oh, Rutuja Nehra, Angela Birchman, Yin Yin, and Enzhou Wang).
TERI THOMSON RANDALL

REFERENCES

Adlin, Tamara. "Persona Lifecycle." Lecture, University of Washington, Bothell, October 25th, 2018.

City of Bellevue (1999). Core Values. City of Bellevue. Accessed: https://bellevuewa.gov/UserFiles/Servers/Server_4779004/File/pdf/Manager/Mission_Vision_Core_Values.pdf

US Census Bureau's 2017 American Community Survey, "The Changing Faces of Bellevue" Powerpoint, City of Bellevue, Bellevue, October 1, 2018.

Zimmerman, John, Jodi Forlizzi, and Shelley Evenson. "Research Through Design as a Method for Interaction Design Research in HCI." Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI 07, 2007. doi:10.1145/1240624.1240704.

APPENDICES

APPENDIX 1: WEBSITE MOCKUP 1

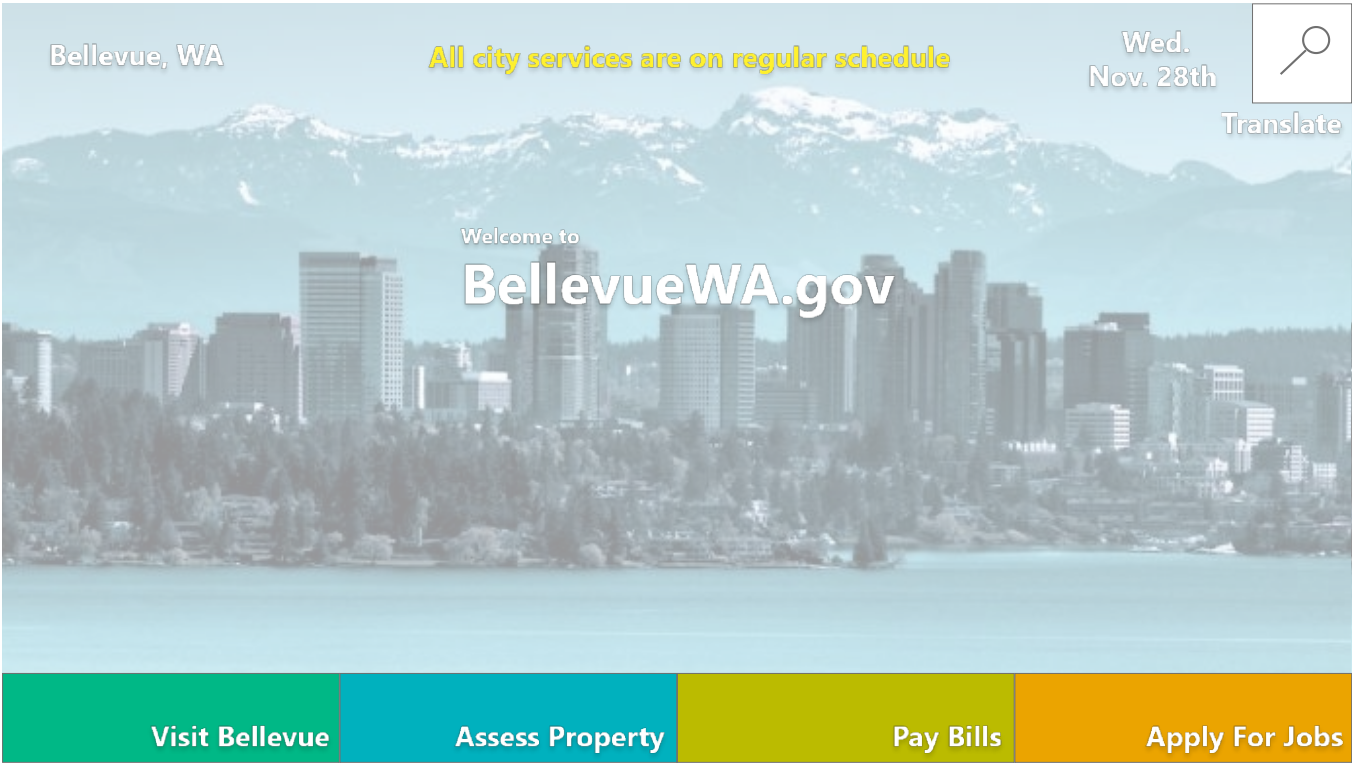*Figure 1.1 Example of Home Page Landing Screen*

Figure 1.2 Example of Home Page Landing Screen with Menu Items Being Hovered Over
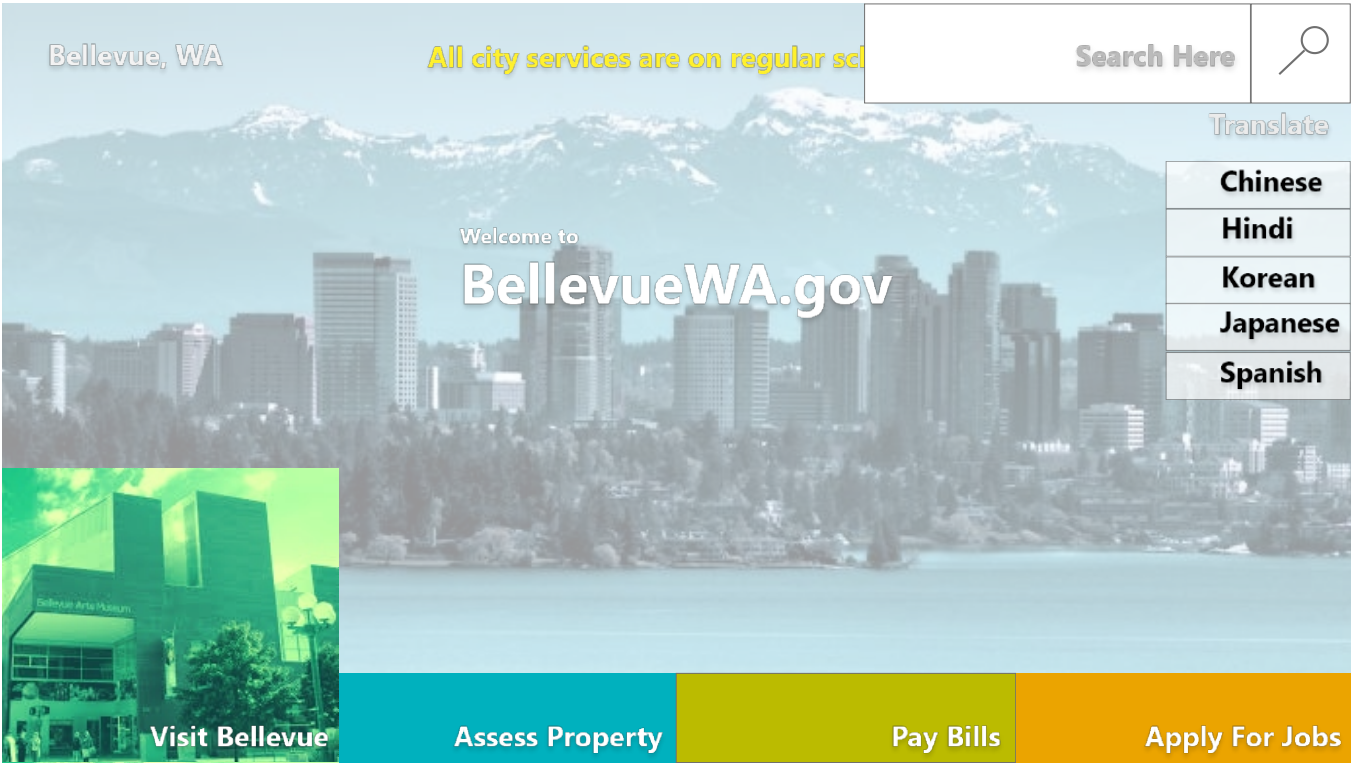
Figure 1.3 Example of Events Section on Home Page

Bellevue, WA   All city services are on regular schedule   Wed. Nov. 28th

Upcoming Events

Nov. 28th
10am - 8pm

Hiltop Holiday Craft Show

Nov. 29th
1pm - 8pm

Mice & Rabbit @ Lake Hills Greenbelt Ranger Station

Dec. 1st
1pm - 4pm

Nature Movie Night: "Salmon: Running the Gauntlet"

Figure 1.4 Example of News Section on Home Page

Bellevue, WA   All city services are on regular schedule   Wed. Nov. 28th

More Events

News Headlines

Safer bikes, faster buses with new bus platform

Council Roundup: Budget briefing on Community Development, Utilities

City congratulates T-Mobile on major campus renovation

Figure 1.5 Example of "Meet the Mayor" Section on Home Page

Bellevue, WA   All city services are on regular schedule   Wed. Nov. 28th

More News

Meet the Mayor

John Chelminiak

John Chelminiak, first elected to the City Council in 2004, is a champion for human services. The mayor represents the council on the Puget Sound Regional Council Executive Board, the Bellevue Convention Center Authority Board and the coordinating board of All Home.

Figure 1.6 Example of City Council Section on Home Page

Bellevue, WA   All city services are on regular schedule   Wed. Nov. 28th

Bellevue City Council

Position 1	Position 2	Position 3	Position 4
John S.	Conrad L.	John C.	Jared N.
Send Email	Send Email	Send Email	Send Email

Call us @ (xxx)-xxx-xxxx   Privacy Policy   Report an Issue   Site Map

APPENDIX 2: WEBSITE MOCKUP 2

Figure 2.1 Entire Home Page Mockup

Figure 2.2 Example of Search Bar Selected with Suggested Search Topics

Figure 2.3 Example of Accessibility Menu

APPENDIX 3: CODING PROCESS

Figure 3.1 Transcription Marked with Code Words

Note: The table displayed on pages 51 and 52 should be viewed together.

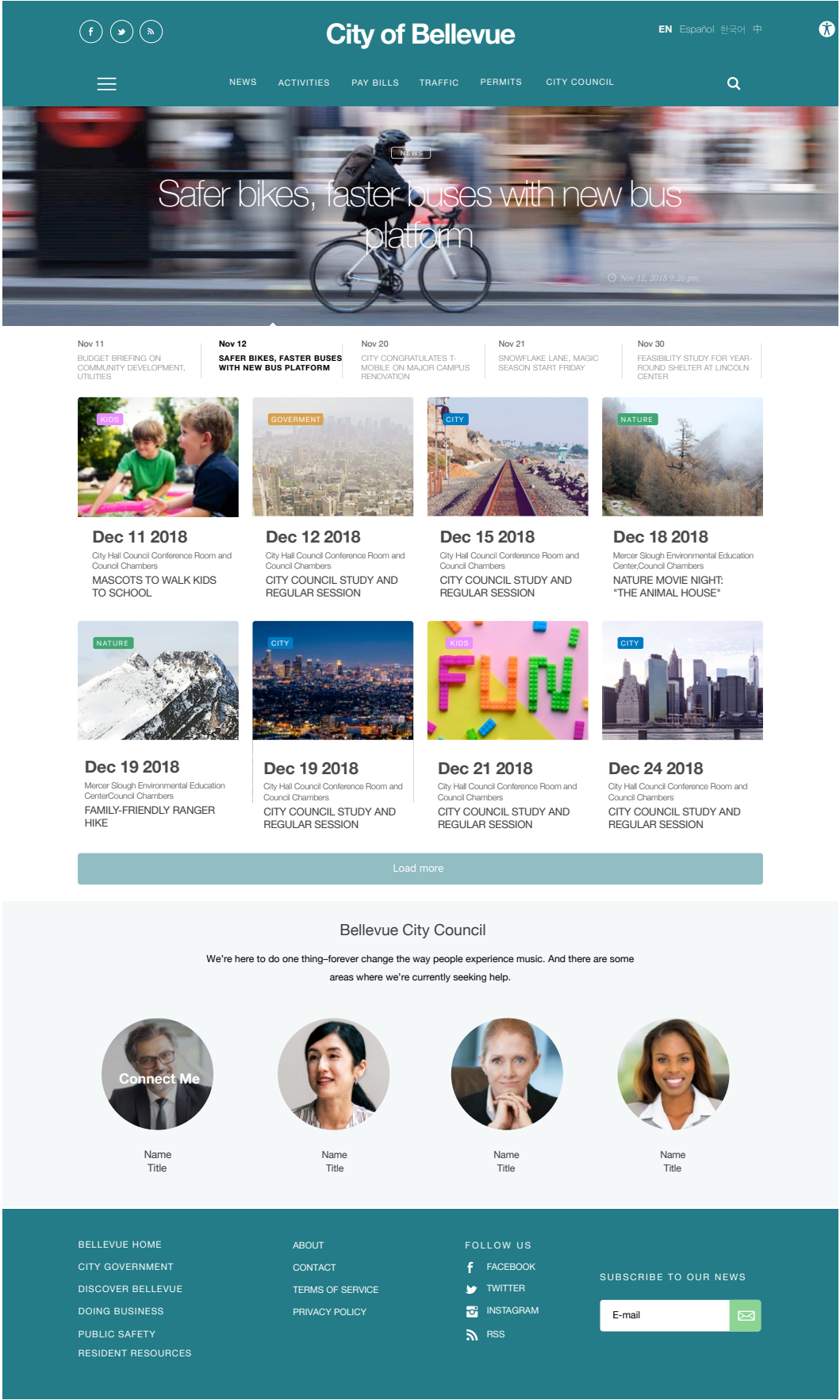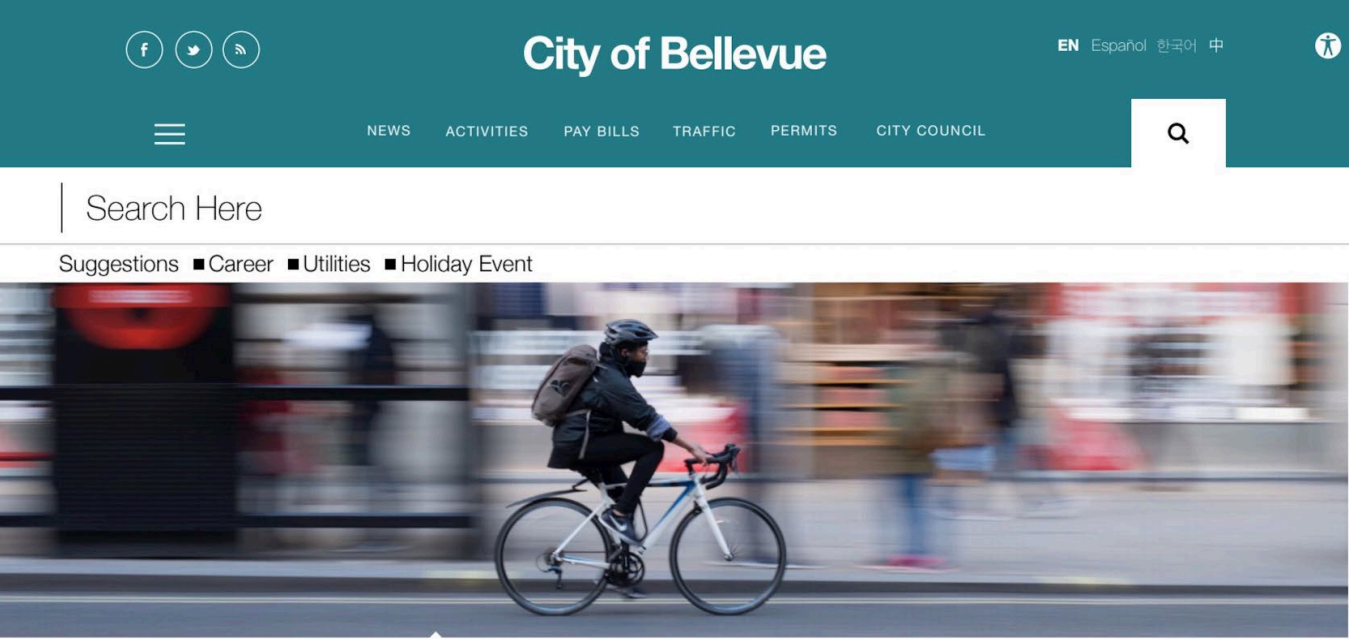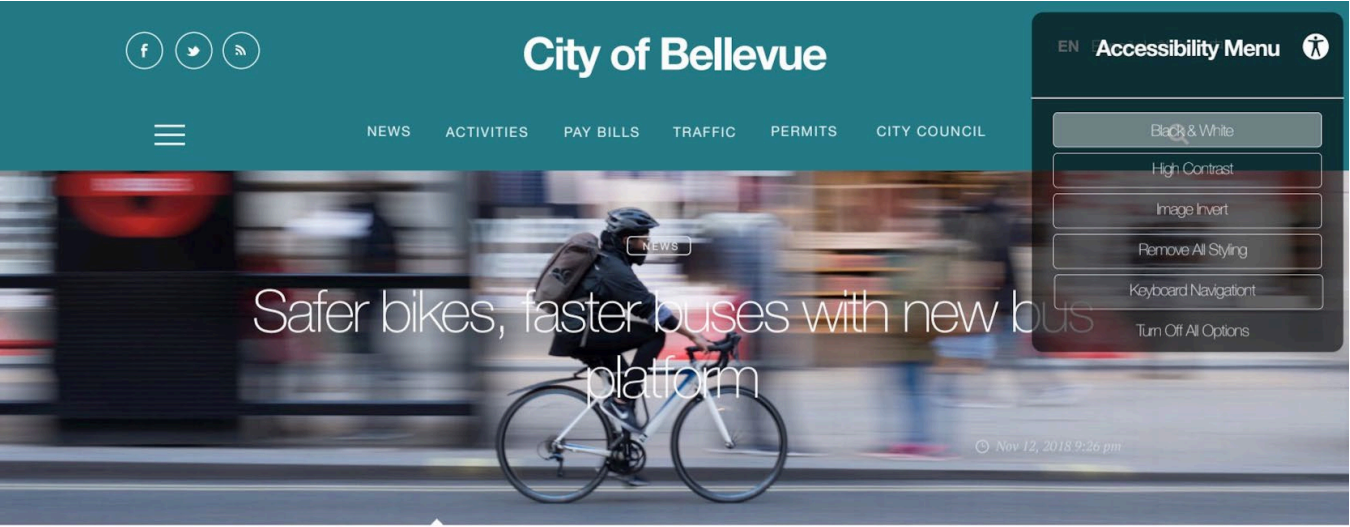| Time	Person Speaking	Sentence/Phrase	Notes	Code
0:27:00	Jerry	Google news shows relevant topics, website events aren't relevant to me	Listed events aren't appealing or engaging	#basic info
0:39:00	Jerry	Navigation structure… about us….	Navigational structure/content doesn't make sense in context	#Bellevue
0:46:00	Jerry	Except the search title… there's only one actionable title… "more"	Jerry back on the HP looking at the navigational path for events	#design-buttons
0:58:00	Jerry	Oh… But the term "more" is too vague for me	Jerry finds the news page but doesn't find it to be intuitive	#navigation
1:33:00	Jerry	The calendar icons are similar	Having similar looking elements causes information to be easily dismissed	#image-content
1:51:00	Jerry	I'm just quickly scanning the structures	Additionally explaining the lack of intuitiveness	#unexpected results / confusion
2:15:00	Jerry	I didn't realize this whole section is about news	News & events blend together when page is quickly scanned	#layout
2:24:00	Jerry	If I go there, I can find that article easily	Opening "more stories" and browsing through city news	#design-visual info
2:56:00	Jerry	Highlight the "see more" so the user can easily find the action	Button blends in too much and it difficult to notice amongst other content	#clarification from interviewer
3:22:00	Jeff	And you're talking about like the buttons below the pictures over there?	Jeff pointing to green buttons on pictures that stand out much more	#community center
3:35:00	Jerry	Put a button below all those sections	Pointing to each module and gesturing to put a see more button in each individual module	#public
3:52:00	Jerry	Above the "see more," something brief	Describing putting a small, quick description of what it's directing to	
4:15:00	Jeff	In your opinion, what information would you find on the HP of the website?	Additional line of questioning to get further input	
4:48:00	Jerry	The first thing I would want to see on a government website would be a map	Answering question about HP	
4:58:00	Jerry	Include all the facilities and parks, etc, so it's easily findable	Answering question about HP	
5:15:00	Jerry	It would be nice to just navigate to a place near me using an interactive map	Describing how he envisions the HP map would work (interactive over static image)	
5:29:00	Jerry	It would be better to have a visual like google maps instead of a search bar	Describing how he envisions the HP map would work (interactive over static image)	
5:40:00	Jerry	I don't use the govt website to pay anything bc all the utilities provided are through third parties	Describing what is useful for him/what he doesn't use	
6:03:00	Jerry	If they were providing map view, traffic could also be shown on there	Elaborating on uses for map view	
6:27:00	Jerry	Right now, all of the things are useless for me	Referring to the information/links available on the HP	

Figure 3.2 Code Words Used to Mark Transcription

Note: The table displayed on pages 53 - 58 should be viewed together.

#design-buttons	#navigation	#image-content
So the activities icon is kind like have some activites. I just clicked and find the details.	So the activities icon is kind like have some activites. I just clicked and find the details.	when you first to go to the website,the first thing you drag this, but looks these are events photo but when you click on they are not
same as my expatation. I am thinking because those two should be related with activities but this button give me some confusion / (button give me some confusion)	and then I go back to the button, those are also the articles not the event.	I expect it will LINK to the page there has a picture to describe the event
and then I go back to the button, those are also the articles not the event.	when you first to go to the website,the first thing you drag this, but looks these are events photo but when you click on they are not	but those LINK not related with the activities themself. because for me the activity item should repersent or show some pictures. And it could give me a best understand what the activity is.
I want to pay some of bill. definitly I will try to click one of the icons here.	when I scrolling down then I can see there have some events.	I would prefer to see a picture
so when you clicked this you expact you pay this or you pay that	Then I properly can clicked it, but im not sur, because this can LINK to a map or other pages i'm not sure.	for me i think the most important thing is to say a schedule, or a list to... or the diversity of activites
to uh simply click the children button children options	I want to pay some of bill. definitly I will try to click one of the icons here.	so that I can select just the activities
if possible use icons small pictures or small icons to refer those categories are related to which kind of group	...but generally, I wouldn't think everybody would prefer pay by phone	and then before i jump into the page i would imagine there a kind of a list or a caldendar
like for disablities you should use icon, for that group of people	because pay by phone first, not very credential for me because yea i dont know why	to provide the schedule of this month or whole calendar of activities but lets see idk
oh i notice this button should be good here	because pay by phone is not very safe or clear for me	ah there ya know there would it would be easy for me to to overview every activities
See, the arrow is..pointing to the outside	i would be very hesitant to call a rep to do something.	or i can quickly scan available things
And..supposedly it should be pointing to the ... down, to down down direction, and I click here, and the arrow will be open , you know, converged to the upside	um however if i pay online i could just click the website, and the all of my account, um anyways	and then another thing another feature i would prefer as you said this task is related to...
Yea yea, not..right...not right to...to left	my credit card number is already installed in the website ya know i just click	then all of the results would be re rendered to activity regarding children regarding the kids
The only...result	so i , the behavior would change for this time, i wouldnt like to change behavior	yea yea but right now i would like to read every detail there are too many cards here
...below these three articles, I could click to see more articles	um, before i answer the question, actually im not sure if you know downtown park	if i would like to see i would click this one because it is the photo here is to these photos are representing

#unexpected results / confusion	#layout
same as my expectation. I am thinking because those two should be related with activities but this button give me some confusion / (button give me some confusion)	yes, I just imagine if there have 6 or 7 same days,their have so many similar item unnecessary for me.
Because I saw this one should be an activity,and I can read the address or schedual about this.	i am a designer, I would like to see the layout. here is the title, but behind the title their is a action, this is wired. they have the different architecture.
those two are articles too, not the event.	there could be a see more.
yes.I just realize they are not the activites.	with a lot of time i would select different options, follow the mobile instructions (regarding pay by phone button)
Then I properly can clicked it, but im not sur, because this can LINK to a map or other pages i'm not sure.	another reason that i wouldnt use this website is i already paid many times (on PSE) (regarding pay by phone button)
So I thought it would LINK to a map or any kind of detail page.	i wouldnt search because search for me is too heavy... i dont know the exact name of the activity
but these activies just LINK to the dates. it doesn't make sense for me because here is some of the details.	its not oh you might mind i think it should be timing based for example it should be based on time
maybe here. and find which is related with the utility bill on the secondery page.	ah seasonal uh not really seasonal but should be a calendar style
supposedly the pay is something I can pay. but very clear,when I see 'pay' means I have to pay where?	so related to my kids i would prefer there would be a category or a drop down menu
so when you clicked this you expact you pay this or you pay that	so default would be all, all for every persons but if i select activities for my children, i would click on drop down menu
what happened	yea so feel like reading all of this information is too much work
but why i click this it lead to community centers	yea even though i read the title and description i feel like the picture is not related to this one
I yea i have no idea to select children list activities then we ...	*comm center it should be a place it shouldn't be a single activity. this picture is just a single activity*
so others? but anyways i haven't finished this task, i don't know how to do	yea you cant make the direct connection between the picture and the description

Figure 3.2 Code Words Used to Mark Transcription Continued

related to Bellevue downtown, or Bellevue city		
Otherwise I would use, uhhh..menu here, orrr search	the bellevue downtown park provides many kinds of activities	***children's activities like community center ah its kinda weird because these pictures are children activities***
And then they...they can...if they couldn't see any other related article, they could just click to explore more news	for example last month... 2 months ago they provided bi weekly uh ya know movie time	yea the picture and the description doesnt match
Except the search title… there's only one actionable title… "more"	um so i guess because idk at that time i dont know how to find that info	then ya know pictures are more attractive than the sentence
Oh… But the term "more" is too vague for me	but then i realize there should be some... a website providing information on activities	like for disablties you should use icon, for that group of people
Highlight the "see more" so the user can easily find the action	if that happened again, i would try to search bellevue official website	***comm center it should be a place it shouldn't be a single activity. this picture is just a single activity***
And you're talking about like the buttons below the pictures over there?	uhh guess you can click on that	yea you cant make the direct connection between the picture and the description
Put a button below all those sections	yea otherwise i would have to read the articles um however even though i read the articles cause im over here	and you would like to have more pictures...
Why not use different colors depending on functionality? Like activities… red color	yea even though i read the title and description i feel like the picture is not related to this one	i probably choose select some pictures here
People with disabilities can identify not just with icons, but also colors	uhm but ya know which are not not a group	2 young children kids uhm and like middle school range children im not sure how to call that but
Use color as a way to better navigation flow	i believe this is the function simliar to category and i would go to their connection brochure (?)	toddlers, kids, children, preschool
	yea youth theatre yea they are the same almost the same	oh i notice this button should be good here
	when i select here because the only word related to children	Picture?
	but this is theater i would like to bring my 2 year old daughter	Yea here is a picture
	if i lost here if i can try again i would go to the website main page and then permit	
	umm yea i believe i can find the relative information here	
	ya see here, fire permit	
	so again, when you get to the comm centers page you have completed this task	

traffic?	yea this remind me to think about another functionality uh if you are going to for example i select a category
which menu, discovering bellevue! let me see	which is children category and i click it its better if i can see the ranges of ages for children
no, nothing	so i can deeply select the subcategory for a specific group of children for example
i dont know how to do that	should be presenting something like that
yea yea this page shows me some of the info but not too broad just some basic information	..because this one, this, this entire section is related to..articles or news
what is the fire permit?	So why do I, why we use a similar LINK, to, increase the..the engagement
comm center? what is the comm center	Because...um..this one is the (hero ?) section, uh, everybody, when they go to the website they will see this..this section, freshly
Why should I go to the page?	And then they...they can...if they couldn't see any other related article, they could just click to explore more news
What is the meaning?	Like see..see more here, something like this. More stories....city newsroom
But what is community center? (But what is community center?)	But I would go here, uhhh..
I don't know this...this..this..uh...this community center means for...	Yea...the information structure is not...very clear for the audience
I don't know that	The calendar icons are similar
Honestly I don't know what's that	Above the "see more," something brief
Community center.. (Community center..)	The first thing I would want to see on a government website would be a map
Really?? But actually if I found some euhh, interesting, activities, I would go to the downtown parks or downtown uh... any .....downtown stores. I wouldn't go to a community centers.	It would be better to have a visual like google maps instead of a search bar
There are no reason for me to do that why.	If they were providing map view, traffic could also be shown on there
So for me the community here is a private place which, you know, where all of the residents can exit to that area. Otherwise people couldn't go to there	It should have activities that are happening right there… but it's just articles

Figure 3.2 Code Words Used to Mark Transcription Continued

	Firstly, I will go to the menu. I wouldn't think this one will be providing any.. any job related information, I will go to "about page"	
	I will go to there umm...footer. There be...supposedly there'd be about	
	Ohh..oh the police station. Let me find...let me find it	
	Uhhh I will go to the government..console.	
	Maybe. Let me try	
	Because this one is related to...any... government things	
	Government counil members	
	Uh if there's nothing I will go to...	
	Ok here's..here is the..here is the police...uhhhh..	
	I can go to the uh...the website here. The police station	
	All of them (follow the ?)	
	Soo...yea this is the, the (dam?) with the department	
	And uhh...they, I will go to, umm..	

	This a, this is a term for me, community	Why is the website providing news when it should be providing info on activities and utilities
	But probably others would treat community different.. but... for me uhh, in my .. in my mind, from my perspective of personal experience I would think community here is just for a group of people..who you know, who are enjoying a specific area and the benefits which are provided them by this community..by a specific group	For this kind of website, I wouldn't use a search bar
	Government? Maybe government I don't know, let me check it	I prefer that you do different levels of structures to render the Information
	Yea I couldn't find that but, career. Yea anyway	
	Hmm?	
	Why the menu here are different from...	
	Oh oh, here is already open	
	Oh I didn't real - realize this is a, this is a, this is a drop down menu	
	It's kinda weird	
	Supposedly a career page	
	Supposedly there..there should be a.. LINK? Or something, something like that	
	But, this page is not related to this one	
	This is the open, open position for..all of the Bellevue departments	