November 5, 2007

Kirkland Single-Family Residential Permit Process
Assessment Findings & Recommendations

Summary

The Latimore Company, a consulting firm dedicated to evaluation and improvement of local government permit operations, assessed the Kirkland Building, Planning, Fire and Public Works Departments’ single-family residential permit process in Summer 2007. The objective of this analysis was to recommend steps the department could take to improve the predictability, efficiency and collaboration of review, particularly to shorten approval timelines.

The assessment identified several strengths including best-in-class online offerings through MyBuildingPermit.com and Kirklandpermits.net, a superior system for managing design revisions during construction, and exceptional Building inspection service. Applicants complimented helpful techs, service-oriented inspectors and skilled building plans examiners.

Six recommendations for improvement were offered, principally to eliminate a time-consuming pattern of planning and forestry correction cycles, the primary complaint of Kirkland applicants. 50% faster permit decisions are possible from more efficient procedures and faster applicant response. Select staffing additions would boost performance further.

Analysis indicates and applicants confirm that the constraint of the Single Family Residential (SFR) process is Planning/Forestry approval. This constraint is eased by third-party review, limited in this case by Public Works approval. This is caused by extensive rework to reconcile an imprecise basis of height calculation, disputes over tree retention, and insufficient intake completeness screening.

The next step is a City decision on how it wishes to move forward with these recommendations followed by implementation planning, launch and project management of the improvement efforts. Follow-on phases for assisted SFR implementation, land use and civil plan process assessment, and tracking system assistance are recommended.
**Table of Contents**

Summary.................................................................................................................................... 1
Table of Contents.................................................................................................................... 2

**Introduction**.......................................................................................................................... 3
Objective................................................................................................................................. 3
Influences on the Kirkland SFR Process ................................................................................ 3
The Latimore Company ......................................................................................................... 5
Methodology ......................................................................................................................... 5
  The Theory of Constraints ............................................................................................... 5
  Process Modeling Methodology ...................................................................................... 6
Scope of Work ....................................................................................................................... 6
  Phasing ............................................................................................................................. 6
  SFR Assessment Tasks ................................................................................................. 6

**Current Process** ............................................................................................................... 7
Process Model .................................................................................................................... 9
Current Performance Numbers .......................................................................................... 16
Strengths ............................................................................................................................ 20
  Best in Class Features .................................................................................................. 20
  Additional Strengths ..................................................................................................... 23
  Applicant Compliments ............................................................................................... 25
Process Constraint ............................................................................................................. 25
Improvement Areas ........................................................................................................... 26
  Two-Cycle SFR Review ............................................................................................... 26
  Additional Improvements .............................................................................................. 27
  Applicant Suggestions .................................................................................................... 27

**Recommendations** ....................................................................................................... 28
1. Clarify Key Design Variables Up Front ........................................................................ 28
  Integrated Tree Plan ....................................................................................................... 28
  ABE worksheet .............................................................................................................. 29
  FAR worksheet .............................................................................................................. 29
  Frontage worksheet ....................................................................................................... 30
  Up-to-date forms and handouts .................................................................................... 30
2. Align ABE Accuracy with the Precision of its Measurements ................................ 30
3. Improve Intake Procedures and Expand Parallel Review ........................................... 32
  First Review Intake ........................................................................................................ 33
  Comprehensive Pre-Revision Intake .............................................................................. 33
4. Increase Forestry and Engineering Capacity .............................................................. 34
5. Collocated SFR Review Team .................................................................................... 35
6. Provision for Greater Demand .................................................................................... 36
  Tracking System Recommendations .......................................................................... 37

**Conclusions** .................................................................................................................... 37
Next Steps .......................................................................................................................... 38
Thank you ............................................................................................................................ 38
Introduction

The City of Kirkland, led by its Departments of Building, Fire, Planning and Public Works, commissioned this assessment of the City’s single-family residential permit process in the summer of 2007 as a first phase of improvement focus. Kirkland is a popular, affluent city with valuable real estate, particularly along the Lake Washington coastline. A generation of 1940s-1960s era homes, lot sizes and businesses are being replaced by modern, high-density architecture. A northern annexation stands to boost the current 45,000 population by two-thirds to 78,000 residents. Kirkland already contains Houghton, a disincorporated city retaining local prerogative to alter development standards. The city codes are sophisticated. These factors shape the nature and intensity of local development and the attendant permit applications and review process.

Objective

The objective of this assessment was to evaluate the City’s Single Family Residential (SFR) permitting process, identify its constraint, document findings, and offer recommendations for improved predictability, efficiency and collaboration.

The Building, Fire, Planning and Public Works departments that oversee development in the City in accordance with Kirkland, State and Federal regulations and industry guidelines wanted to know if elements of the process could be improved to deliver faster turnaround times and foster greater customer satisfaction.

There was interest in examining all the facets of development review: land use actions, civil plan reviews, commercial projects, and the interactions these have with each other and with residential permits. The most pressing need was to focus on single-family residential building permit reviews, thus this was selected by department leaders as the first phase for improvement.

Influences on the Kirkland SFR Process

As indicated, a number of factors shape the needs and service level of the development review process. Statewide, the building, fire and local zoning regulations, the growth-concentrating effects of the Growth Management Act (GMA), plus the environmental and land use controls of the State Environmental Policy Act (SEPA) and Shorelines Management Act (SMA) and locally-adopted critical area ordinances (CAO) affect all jurisdictions. Kirkland’s SFR permit process is influenced in several other defining aspects.

A generational change is underway. Real estate value has skyrocketed over the last few decades as high-tech eastside commercial emerged. Today’s red-hot market is fueling a rapid transformation of suburban home sites into modern, upscale single, multifamily and mixed-use residences, many with their own elevators, climate-controlled wine cellars, accessory dwelling units, and expansive windows to capture lakeshore views. Kirkland is a regional destination for its parks, restaurants, and pedestrian-oriented commercial centers. Kirkland is cool. ☺
There are other influences on the SFR review process.

Technology is an important part of Kirkland’s process. Over time, the City has built an effective permit tracking system, built on a popular but aging Tidemark Advantage® platform by Accela®. And, the city has embraced the web with its best-in-class MyBuildingPermit.com and KirklandPermits.net utilities. Wireless laptop computers are coming to field inspectors too.

Further, Kirkland development standards are sophisticated. The City regulates forestry to preserve trees during development. A Floor Area Ratio (FAR) is imposed (outside of Houghton) to limit the proportion of homes to sites. Average Building Elevation (ABE) is monitored to preserve view corridors and keep new structures from shadowing existing neighborhoods. And, new homes and substantial remodels require corresponding curb, gutter and sidewalk frontage improvements.

There are organizational influences on the process also. A SFR permit application crosses four departmental boundaries, Building, Fire, Planning and Public Works. But, these departments are conveniently collocated in City Hall. The staff is highly skilled. Most personnel have decades of experience in their fields. Several have been with Kirkland for years. Some are journeyman electricians enabling The City to conduct its own electrical plan reviews and inspections.

Lastly, the City offers a third-party review option for applicants. This accelerates the Building and Planning portions of application review for an extra fee on these elements. Two-thirds of new home applicants choose this option.
The Latimore Company

The Latimore Company, LLC (TLC) is a community government consulting firm located in central Snohomish County that is dedicated to improving the predictability, efficiency and collaboration of permit operations. TLC has consulted for over 20 Washington cities and counties to improve permit process performance.

Its founder, Kurt Latimore, a professional engineer, led the deployment and refinement of the Model Permit System, a package of administrative processes proven effective at streamlining permit application preparation and review, through the Economic Development Council of Snohomish County in 2003. This work was recipient of the Puget Sound Regional Council’s Vision 2020 award.

Methodology

TLC applied its unique set of methodologies for assessing the Kirkland process.

These included:

- Theory of Constraints
- Structured System Specification.

These techniques were integrated with specialized system analysis based on:

- Interviews
- Observations
- Applicant Feedback
- Analysis and Comparative Measures.

Recommendations propose specific enhancements to improve the predictability, efficiency and collaboration of early inquiries, application preparations, plan review and inspection.

The Theory of Constraints

Influencing efficiency recommendations is Eliyahu Goldratt’s Theory of Constraints. Goldratt, a physics professor, found that by modeling organizations and their objectives as physical systems (like gravity, water flow or electromagnetism) that his model predicted dramatic performance improvement was achievable. Organizations throughout the world are realizing these results. Its fundamental premise is that within any system is a constraint, rarely more than one, that generally remains consistent until changed by market forces or systematic change.

Once we understand this constraint (a particular resource, policy or skill), we aim our improvement efforts on it. This elevates the performance of the entire system. In this assessment of Kirkland single-family residential processes the constraint was identified and improvement recommendations were focused accordingly.
Process Modeling Methodology

Tom DeMarco’s *Structured System Specification* method was used to depict the Kirkland process. This effective method focuses on the data that flows between process steps, noting that any system at its conceptual level performs a series of transformations to incoming data (such as an application) to produce new data (like a permit). By focusing on the data as it is transformed through the sequence of internal system processes, we can see whether there is a smooth evolution, or whether change or rework are present along the way warranting improvement.

The method uses a series of oval “bubbles” and arrow “data flows” to depict processing steps and the data in and out of each step. Implicitly, a step can begin once its first data-flow input is received, but cannot complete before its last input is received. Multi-tasking is generally minimized when processing begins only when all inputs are present (Goldratt). Processing steps (bubbles) are numbered uniquely and are often decomposed into finer working-level steps. This is shown by decomposing Process 1 into processes 1.1, 1.2… and 1.2 in turn into 1.2.1, 1.2.2…, etc. This enables us to visualize data flow in great detail (at the decomposed levels) or summarized at a more abstracted, higher level. Thus we can address details as well as see “the big picture” while maintaining connectivity between both.

There is a loose sense of time in the diagrams as data generally flows left to right and process numbers generally increase in kind.

Dashed arrows or bubbles indicate data-flows or processes which only occur sometimes or are a lesser-chosen alternative among options. Processing steps outside the scope of this analysis are shown as rectangles for reference.

Scope of Work

Assessment was proposed in phases. The scope of this report is the first phase, a standalone analysis of the City’s SFR process.

Phasing

Follow-on phases may include:

- Assisted implementation of SFR recommendations
- Preparations for a next-generation permit tracking system
- Land use actions and Civil plan review
- Commercial projects.

SFR Assessment Tasks

The specific tasks under this SFR phase included:
Task 1 – Interview the Team
TLC examined how the current process is designed and how it operates for SFR plan review and inspection. Personnel across Building and Fire, Planning and Forestry, and Public Works were asked for their thoughts and insights. Most sessions were small group or one-on-one discussions. These began with a series of kickoff orientation meetings.

Task 2 – Observe Interactions and Workflow
TLC observed how the office and field team operates.

Task 3 – Collect Applicant Feedback
TLC collected feedback and insights from SFR applicants.

Task 4 – Map the SFR Process
TLC documented the SFR review and inspection process.

Task 5 – Analyze the Existing Process
TLC evaluated the current SFR performance and identified its constraint.

Task 6 – Report Findings & Recommendations
TLC documented herein its findings and offer recommendations for improved predictability, efficiency and collaboration in the SFR process.

Current Process

Standard SFR review begins with walkabout, where an applicant takes his or her plans to the Planning, Public Works and Building counters in any order for intake completeness screening. Missing items are noted on the reverse of the plans for applicant action before plans can be taken in. Once all three are thumbs-up, a building technician completes the intake and initiates departmental routing based on the type of application and any premium review selection.

Once received and assigned in Planning, forwarded to Forestry, self-assigned in Building, forwarded to Fire if published criteria are met, and received by the primary SFR Public Works reviewer, the application typically ages until it nears its designated timeline target set by the departments. Reviewers then check applicant drawings, tree plans and substantiating studies.

Each documents his or her comments in a letter, attaches it to the tracking records in Advantage®, e-mails a copy to the applicant contact, and routes a cover sheet back to Building. A Building technician assembles the comment letters and mails them to the applicant contact.

The applicant, his or her architect, engineer, and/or arborist revise applicable drawings, reports or analyses and return corrections singularly or in concert with a “pre-revision” cover sheet. Corrections are routed to the requesting reviewers and others as seem warranted.

This cycle repeats until compliance across the codes is reached.
Final SFR corrections are often by redline, where the reviewer marks up the plans with concurrence from the applicant as a timesaving step. Then, the redlined plans are routed back to Building, where the plans examiner consolidates redlines so both the field and office plan sets are the same (known as “duping”). The applicant is called for pickup, settles any remaining fees, provides any last “IOU” documents, and the permit is issued.

Construction then begins, punctuated by standard and any special inspections. Final inspections begin as construction nears completion. Planning and Public Works must sign off construction before Building can issue a certificate of occupancy. New laptop computers will simplify the timing of this coordination by allowing real-time signoff and signoff verification in the field.

During the review and inspection process, applicants can use KirklandPermits.net (Fig. 1) or MyBuildingPermit.com to check department status and see whether anything is waiting on them.

![Figure 1 - Permit Status Online](image)

Applicants also have an option of third-party review for new home applications. Third party review is designed for a 3 week first-review turnaround time, compared with 7 weeks for standard (in-house) review. There are currently three outside consultant firms that conduct building and fire code reviews. Accelerated planning review is handled by staff through
overtime or one outside consultant firm. Forestry, Fire and Public Works reviews remain in-
house. At inception of the third-party review option, Building and Planning/Forestry reviews
averaged 15 weeks. The Public Works/Fire portion averaged 3 weeks at the time, so this review
was kept inside, sparing the extra fees that would have applied. Since that time, the City began
requiring street frontage improvements on substantial remodels which complicated Public Works
review and new SFR volume rose from 140-150 homes per year to 220-240. Now the Public
Works track averages 5½ weeks and paces third-party review.

All second and successive review cycles, whether in-house or third-party, are targeted for 2 week
turnaround. If a new address is required, it is assigned that day prior to third-party routing.

Smaller scale remodels and certain additions and alterations qualify for fast-track service
offering in-house 2 week reviews. The smallest projects receive express 2 day turnaround.

And, an applicant can elect to package demolition and/or accessory dwelling units into one
review. Frontage improvements, where required, are also packaged into this review.

**Process Model**

The Kirkland SFR review and inspection process is shown in the following data flow diagrams.
These diagrams were developed interactively with staff.

Primary steps are shown in Figure 2. Figures 3-7 depict the details.

SFR pre-submittal conferences (Step 2) are rarely requested.
Figure 2 - Main SFR Processing Steps
Figure 3 - Intake Process
Figure 4 - Review Cycle
Figure 5 – Department-Level Reviews
Figure 6 – Permit Issuance
Figure 7 - Inspection Process
**Current Performance Numbers**

Typical new SFR submittals require 3 review cycles (a first review plus two “pre-revision”\(^1\) correction cycles) over the course of 24½ weeks for standard in-house review (Fig. 8). Third party review accelerates this by 6½ weeks to an average of 17 weeks (Fig. 9). Both are lengthy by comparison with a cross section of regional jurisdictions (Fig. 10).

First reviews, governed by published performance targets, average 7½ weeks in-house (vs. a 7 week target) and 5½ weeks for third-party review (a 3 week target). Planning and forestry review paces in-house service (Fig. 11). Public Works review for compliance with the City’s frontage and municipal utility connection requirements paces third-party timelines (Fig. 12).

Compliance with the Building and Fire codes generally requires at least one correction cycle. Planning/forestry and Public Works compliance generally requires two cycles (Figs. 13 and 14).

Incoming corrections are routed to requestors and others: “When in doubt, route.” This procedure routes nearly all corrections to Building to check for introduced problems. This increases Building correction cycles and timelines beyond what they would be without this oversight responsibility.

---

1. Times include applicant rework

**Figure 8 – Standard SFR Permit Approval Times**

---

\(^1\) Pre revisions are drawing changes prior to issuance. Post revisions are field changes after permit issuance.
Figure 9 – Third-Party SFR Permit Approval Times

Figure 10 – Regional Permit Timelines
New SFR Permits Average 2.6 Review Cycles

Figure 11 – Department Cycle Times (Standard Review)

Excludes one extraordinary 235-day applicant revision

Figure 12 – Department Cycle Times (3rd Party Review)
Figure 13 - Typical Number of Cycles Needed to Approve (Standard Review)

Figure 14 - Typical Number of Cycles Needed to Approve (3rd Party Review)
Turnaround times for the express (smallest) and fast-track (small) SFR additions are must faster than new home review, as intended (Fig. 15).

SFR additions valued over $200,000 (about 2,000 sqft) trigger street frontage improvements and new-home FAR and ABE requirements, which add substantially to design and approval effort (the standard review in Fig. 15). Public Works review, when triggered, takes about the same amount of time to review as new homes, thus pacing cycle times.

**Strengths**

The Kirkland SFR process has several strengths. Applicants too compliment the staff for appreciated strengths.

**Best in Class Features**

Foremost, the process boasts three best-in-class features:

- The Kirklandpermits.net and the eCityGov Alliance MyBuildingPermit.com portals
- Post revision configuration controls (known as “Goldenrods”)
- The Building inspection team.
Kirkland is part of the pioneering regional effort eCityGov.net that has over the last several years answered an applicant and resident need to be able to track permit application progress online. This consortium of local building officials formed MyBuildingPermit.com and linked their disparate internal tracking systems to it. Over time, they added the ability to apply online for simple applications and request inspections. Numerous tip sheets for how all participating jurisdictions handle common design situations under the code were posted. More cities and now counties are linking their systems to it and adding new features.

Kirkland adds even more features with its KirklandPermits.net version (Fig. 16). It provides a convenient means for the public to comment on land use actions, as well as see beautifully organized synopses of development projects within a selected neighborhood. This is without having to comb through a slew of applications to find one of interest: Very well done.
Goldenrods

Once plans are approved and construction begins in the field, it is not uncommon for builders to request design changes to capitalize on better ideas or to resolve construction problems. Minor revisions are generally approved in the field by inspectors. Significant changes require approval in the office by plans examiners. Where many jurisdictions struggle is ensuring that the inspectors know when office-reviewed revisions are approved and what the final resolution is.

Kirkland developed a clever mechanism for keeping this organized. A “goldenrod” (Fig. 17) is the official signal to inspectors that a revision has been approved and is now the basis for inspection. The goldenrod (or “gold slip”) is inserted with the approved detail into the office construction folder that contains the inspection records for daily inspector use.

As an aside, Kirkland also redlines commercial plans to indicate a threshold for when a goldenrod is necessary and when a change can be decided by the inspector. Good practice.

Building Inspection

Kirkland’s building inspection team is special.

Electrical Inspection

As noted previously, the Building department conducts Kirkland electrical inspections. Most Washington cities defer to Labor & Industries for this. But, in Kirkland many inspectors can inspect structure, plumbing, mechanical systems and electrical wiring in one site visit. This is a rare and remarkable combination of journeyman skills. It is a great convenience to builders in the city who are coordinating the timing of framing, insulation and wiring contractors. And, it provides local oversight over residential and commercial electrical systems.

Inspection Service

Kirkland inspectors confirm their appointments from the night’s hotline inspection request. They grant priority to those with special scheduling constraints, time-sensitive concrete pours, or requesting final inspections. This is not only appreciated by builders and homeowners, it reduces the impact of times when a builder isn’t really ready for inspection. “I’ll be there at 7:40. You will too, right?”

Kirkland inspectors also hit the street much earlier than in most cities. Morning inspections are valuable to builders since their trades start early in the day. In many cities, inspectors aren’t out
until 9:00 or later. Kirkland prepares the daily inspection lists the night before, so all is ready for
the supervisor on the walk in for any rebalancing of workload (inspectors have set regions in
town). Inspectors are commonly out by 7:30.

It appears that the high-end nature of Kirkland construction attracts talented builders too.

**Additional Strengths**

**Review Rigor**
It is apparent from the interviews and observations of plan review that Kirkland staff is thorough
and skilled at their craft. Between the high-end construction features of current SFR submittals,
the sophistication of Kirkland codes, and the rigor of the plan check, Kirkland Building
department reviewers average 6-12 hours of analysis compared with 2-6 hours that is typical for
the region. The Planning effort is about double the regional norm for ABE and FAR checks.
Most jurisdictions don’t have a separate forestry review. Lastly, the Public Works reviews are
often an order of magnitude more complex than in most jurisdictions due to frequent triggering
of frontage improvements normally seen only in plats.

The inspections go particularly smoothly as a result, and the homeowners are extra assured of a
sound product. Several applicants complimented the Building examiners and inspectors for their
professionalism.

**Redlines**
As mentioned, the Kirkland team incorporates minor corrections by redlining the drawings. This
allows the departments to approve redlined plans without extra weeks for applicant drafting, pre-
revision and routing. Reviewers get concurrence from the applicants and their design
professionals over the phone. This creates an administrative task at the end to merge (duplicate)
redlines from separate reviews together into a pair of approved drawing sets called “duping.”
But, the time savings to the applicant and the reduced burden of writing an extra letter and
routing an extra set of corrections through the departments is significant. Recommendations
include reallocating the duping task, followed by a final check by the Building plans examiner
before issuance.

**Weekly Team Meetings**
Managers meet weekly to assess and optimize performance of the departments as a whole.
Further, each manager holds weekly department meetings with their staff. The first two hours of
Wednesday mornings is set aside for meetings. This is important for keeping staff apprised of
latest information and standards, and for addressing any issues. Many organizations dispense
with this discipline when workload presses. But, this foregoes potential improvement.

Department managers also monitor performance monthly against established turnaround targets.
This assessment is often the first time many jurisdictions see such information about their
process. Kirkland already has major pieces in place. A deeper analysis to report cycle patterns
and second/third review cycle times, evaluated weekly, would take this to the next level.
Walkabout
Kirkland SFR applicants present their application to the three department counters for completeness screening prior to submittal. This practice reveals gaps in the application materials that normally surface weeks into review and stop the process midstream. Applicants can correct deficiencies in hours or days, saving weeks of inconclusive review and a correction cycle. The most rigorous completeness screening occurs today in the Building and Public Works departments. The beneficial effect of this for limiting building department cycles is apparent. Recommendations include tightening of the planning and forestry intake checklists and screening procedures to reap the same benefit.

Public Works Review Debriefing
The Public Works department has a practice of calling their applicants to the counter to discuss findings from their first review. This is designed to get the applicant on the right track for a successful second review. While many SFR reviews require additional Public Works review cycles today, enhancements to the second-cycle intake process and changes in the planning and forestry first-review intake standards should reduce the effect these corrections have on the engineering review. Stock (sometimes called base, basic or master) plans, where a popular house design is often pre-approved and used repeatedly on multiple sites and in multiple jurisdictions, frequently lack Kirkland frontage improvement plans on the first round.

Public Works Frontage Improvement Process
As indicated, a consequence of Kirkland regulations stipulating frontage improvement on major additions is a substantial increase in Public Works complexity for SFR homebuilders, reviewers and inspectors. The department has responded by easing the process where they can. Beyond the debriefing described above, the team accepts the day’s inspection requests as late as 7:00 AM, professional engineering expenses are waived for obvious configurations, frontage construction can be done offsite if the neighbors don’t want it, inspection and maintenance crews are routed plans for their comment (with tracking system signoffs), pre-con meetings are held onsite with the builder, and frontage plans are packaged within the building application routing like accessory buildings and demolition can be.

Combination Review
Typically separate demolition and accessory building plans (and Public Works frontage) can be combined in Kirkland into one packaged review. This provides a holistic view of the final development to reviewers and reduces potential surprises for the applicant should the aggregation of structures exceed any thresholds. Replacement of an old home with a new home, an accessory dwelling unit and attendant frontage is currently a popular combination in Kirkland.

Recommendations for an integrated tree plan and separation of the demolition portion would make this work even better.

Technician Addressing
In many jurisdictions, the intricate task of addressing falls on the building official, fire marshal, engineers or other specialists counted on for fast turnaround on tasks only they are qualified to perform. In Kirkland, technicians assign addresses and new street names. This is an excellent

2 Public Works and Planning Dept. inspection requests will soon be combined into a single hotline with Building.
use of technician skills and frees specialists for other workload. However, third-party review awkwardly requires the technicians to address a building immediately, before routing to outside reviewers. This task can take hours to ensure e911 compliance and compatibility with neighboring addresses that might have to change too. This should occur in parallel with other department reviews, like it is for standard in-house review. Fortunately, most addressing occurs at platting in Kirkland.

Collocation in City Hall
The departments are collocated in an attractive City Hall facility. While the lobby separates Planning, Forestry and Public Works from Building and Fire, a divide that affects the ways the departments speak of themselves and the others at times (noticed by some applicants too), the close proximity is great for applicants and the team.

Applicant Compliments

To amplify the compliments of applicants who commented on the City’s SFR process, they spoke well of the Building department inspectors and plans examiners on the strengths noted previously. Several noted accessibility to reviewers they appreciated (but lost when dealing with third-party reviewers) and cited a reasoned problem-solving approach the plans examiners take with them while exploring alternatives.

Applicants appreciate expedient redlines.

Most like the option of third-party review when time is of the essence (it usually is) and standard review when economy is preferred. A few added that expedited timelines ought to apply to the portions that remain in-house too (some loudly). Some asked for a third-party option for additions and remodels too. A dissenting voice was frustrated by a lack of access to outside reviewers and a degree of unpredictability how a different third-party reviewer might apply the same codes.

Many praised helpful counter staff across the departments. A few had particular thanks for the Building techs for their assistance.

Process Constraint

Analysis indicates and applicants confirm that the constraint of the SFR process is Planning/Forestry approval. This constraint is eased by third-party review, limited in this case by Public Works approval.

Typically two correction cycles are needed to comply with tree plan, FAR zoning and ABE building height requirements. This magnifies planning and forestry workload. This, in turn, contributes to longer planning and forestry first-reviews, since corrections with a two-week turnaround target take priority over first reviews with a seven week target. Further, the forestry review is sandwiched within the planning review. And, these cycles ping other departments for rechecks, particularly Building who ultimately approves the application for issuance.
Applicants lamented continuing uncertainty and frequent disagreement with planning over the basis of ABE and FAR calculations. Surprise from tree plan disagreements coupled with varying tree retention requirements as projects evolve from plat, land surface modification and demolition to building permits were equally criticized.

Planning is also a signatory on final inspections, peppering plan review with short-turnaround field inspection tasks. This often delays building inspectors who are otherwise ready to issue certificates of occupancy. Planning may not find the inspection card onsite when they go either.

Therefore, the constraint of in-house review is planning and forestry approval.

While resolution of planning and forestry issues gets compressed when applicants choose third-party review – the applicants incorporate their corrections much faster too – in house Public Works timelines remain largely unchanged, a frustration of applicants paying for accelerated Building and Planning results. Forestry is faster by virtue of higher in-house review priority.

**Improvement Areas**

A clear opportunity exists to trim the number of SFR applications that require three, four, five or more review cycles to approve (Fig. 19). Extra cycles balloon timelines, delay other applicants, and frustrate and overload the team. Further, the prospect of long review times entices some to submit plans prematurely just to secure a spot in line to submit the real plans on the faster second cycle. A set of other improvements would also boost service.

**Two-Cycle SFR Review**

A two-cycle review that provides for one comprehensive pre-revision would add predictability and greatly boost efficiency (Fig. 18). This is enabled by improved FAR and ABE calculation methods, an integrated tree plan, more rigorous planning/forestry intake checks, and establishment of pre-revision intake standards. These practices also accelerate first-reviews as less staff capacity is diverted to quick-turn correction cycle reviews. Fewer corrections cuts redesign time as well.

![Figure 18 - Improved Process Design](image-url)
**Additional Improvements**

A series of other changes would further team performance. These have to do with third-party review coordination, the timing of demolition permits, maintaining up-to-date forms and handouts, “duping” (the merging of redlines so the two plan sets match), and tracking system enhancements.

**Applicant Suggestions**

While applicants had good things to say about the Kirkland SFR process, there were some changes requested too.

All wanted a faster process. Faster first reviews and faster second reviews.

All cited forestry and planning approval as the primary challenge, particularly forestry that can restrict development options in ways that can confound late in the design process and complicate construction for doubtful benefits. Instead of a quality result, “it preserves crapo trees,” one said.

ABE standards were lamented for inconsistency of planner calculations and the resulting “houses in holes” that taller home designs dictate. One challenged that Houghton, without FAR zoning, has perfectly fine and compatible homes being built.
**Recommendations**

Six main recommendations address the primary opportunities for improvement.

The first priority is to clarify the regulations that precipitate most revisions so applicants can make more confident design decisions. Recommendations 1 and 2 improve this.

The next order of business is to refine the internal processes to enable conclusive first and second reviews and unbundle the pacing reviews so they occur in parallel. Recommendation 3 accomplishes this.

Once these timesaving process enhancements are incorporated, the next-higher level of service is capacity driven. Additional forestry and engineering hours would be needed. Recommendation 4 suggests parameters. A collocated, multidisciplinary SFR review team that coordinates its own workload would make best use of these critical capacities. Recommendation 5 lists merits and considerations.

Lastly, improved City performance will have the effect of attracting more standard review applications as in-house turnaround times approach third-party levels. Recommendation 6 provisions for this added demand.

Staff also requested guidance on considerations for a replacement permit tracking system. The departments’ existing – and nicely customized – tracking system, Tidemark Advantage®, is aging and through industry consolidation, may need to be replaced soon. Selection criteria are offered.

### 1. Clarify Key Design Variables Up Front

The areas of most frequent change are the tree plan, ABE and FAR calculations, and engineering frontage designs. Therefore, we should strengthen the applicant’s ability to arrive on the same conclusions during their design process that City staff will in the course of their reviews. Applicants emphasized uncertainty in ultimate tree plan requirements from plat to grading/land-surface-modification (LSM), to demolition and final building permits in addition to ABE and FAR frustrations.

A new integrated tree plan, worksheets and a more concrete basis for ABE and FAR calculation, an engineering frontage worksheet, and ensuring lobby and online forms and references agree and are up-to-date get us there.

**Integrated Tree Plan**

The integrated tree plan would allow an applicant and the City to agree on tree retention, protection and replacement planting areas up front in the process. When an applicant applies for a Tree Plan III at subdivision, areas of disturbance that are inferred in today’s review would be established where future demolition, LSM, driveways, underground utility lines, building footprints and walkway aprons are planned. Planning and Public Works would verify the
feasibility as part of their plat reviews. The integrated tree plan would be recorded. It is intended to be durable.

At successive applications the forestry review could be streamlined to verify that the proposed activities remain within the predetermined area of disturbance and that correct protection details are included. The recorded integrated tree plan could be queried in the tracking system.

For projects on existing lots, the integrated tree plan would be established at the first triggering application, typically a Tree Plan II at LSM, grading or demolition or Tree Plan I major or minor at building submittal.

Amendment of an integrated tree plan isn’t impossible. The applicant would do so by submitting the appropriate Tree Plan with their subsequent application. But, if they propose removal of different or additional trees, the tree plan must receive preliminary approval prior to application submittal. The intake checklist and walkabout would enforce this prerequisite.

Preliminary approval denotes agreement with updated arborist conclusions and suitability of the revised area of disturbance with Chapter 95 tree standards. It remains preliminary since the revision could run afoul of other department regulations. To make it easier for applicants to coordinate this during their design process, integrated tree plan amendments would be a great addition to MyBuildingPermit.com or Kirklandpermits.net. The arborist report and revised tree site plan would be electronic attachments. A two-week turnaround could be targeted. The applicant could request a pre-submittal conference to resolve any disagreement that surfaces at preliminary approval.

The applicant could also request a pre-submittal conference from the start if they wanted to add the assurances of Planning, Public Works and Building in the preliminary approval tree review.

**ABE worksheet**

A new worksheet would be added to the required intake package. With it, the applicant would designate which basis of ABE calculation was chosen, a survey elevation or the City’s GIS topography. Recommendation 2 describes the details. The worksheet would have spaces for the four building corner elevations, the calculated ABE, and the peak roof height (the worksheet would explain exclusions like chimneys). The intake process would validate that a survey or a printout of the GIS topography is included (this could be printed and attached at walkabout).

**FAR worksheet**

A new worksheet would also be added to the required intake package for FAR calculations. It would explain what spaces count toward floor area and typical spaces that don’t. Fields would be provided to fill in the square footages of the each applicable space. A location for the 50% calculation would be included. A box at the top could be checked to waive Houghton properties. Planning would verify the worksheet is present and plausibly filled out at walkabout.
**Frontage worksheet**

A third worksheet would be added (or appended to the FAR worksheet) for the applicant to show the basis of their calculation of the percentage of new square footage to existing. A box at the top could be checked when frontage was installed through a recent plat. Otherwise, if over 50% the worksheet will direct them that engineered (wet stamped) frontage designs are required at intake. An applicant could propose a waiver of the wet stamp requirement by obtaining a waiver signature from Public Works on the worksheet prior to submittal.

**Up-to-date forms and handouts**

Some applicants noted that online and lobby forms and handouts are not always the up-to-date versions required for intake. The departments, of course, need to maintain configuration control of these. Staff members correctly observe that a single go-to person responsible for this upkeep would be beneficial. Document revision procedures would necessitate the participation of this custodian and any IT specialists needed for posting. This fits the technician skill set well.

**2. Align ABE Accuracy with the Precision of its Measurements**

ABE accuracy is out of step with the precision of its measurements.

Planning review of applicant ABE calculations that are normally shown somewhere in the drawing sheets is based on City GIS topography. Planning compares the reported elevation of the midpoint of each exterior wall with the adjacent grade by interpolating two-foot GIS contours. Typical two-story Kirkland home designs closely approach the 25’ upper height limit in most residential zones. 24.92 feet (1” less than 25”) is common. That’s 1” accuracy where the precision of the measurement is 2’ delineation. Disagreement generates a correction cycle.

Can you calculate the ABE of City Hall (Fig. 20, next page) to the inch?
This suggests a survey as a solution to bring the accuracy and precision back in line.

This situation is akin to construction in flood plains where no base flood elevation has been established (FEMA Zone A). The applicant has to demonstrate the proposed structure sits above the highest adjacent grade. A surveyor shoots the four proposed building corner elevations based on a recognized datum, often the 1929 NGVD29. Plans are accepted if proposed floor joists are adequately above the surveyed corner grade elevations. Then, after construction, the surveyor returns to shoot the actual building elevation to assure that it indeed has the necessary freeboard.

A simpler calculation and a new choice for the elevation basis should be offered.

The ABE calculation could be simplified to be the average elevation of the four proposed building corners. Recent approvals could be analyzed to see how the current and proposed formulas compare. They should be quite close.

Additionally, the applicant has a choice for how the four corner elevations are arrived on. The quick version would be based on the same City GIS topography that staff uses to verify ABE.

---

3 It’s the top surface of the first finished-floor joists to be precise for freshwater bodies. Tidal areas vary.
The topo line closest to each building corner\(^4\) as proposed on the site (depicted right on a printout from the City’s GIS system) would be used. The new ABE worksheet proposed earlier would have fill-in fields for these numbers. Thus, it would be easy to verify at walkabout. The applicant could stake these locations for site verification if needed.

This would give the applicant a quick answer that would be accepted for review. Based on the design being considered, if the applicant wanted to push the envelope further, he or she could survey the four elevations, just like a flood plain, and use the average of these shoots for the ABE. Planning would then use this basis for review.

This yields a reproducible calculation that has both prescriptive (GIS) and engineered (surveyed) options, just like the building code offers.

### 3. Improve Intake Procedures and Expand Parallel Review

Next, intake procedures should be strengthened so that first review is conclusive. Pre-revision intake standards should also be added to preclude third, fourth and fifth reviews. Fewer cycles complemented by parallel review tracks for forestry and fire stand to significantly accelerate approval timelines.

Standard in-house review (Fig. 11) average 7½ weeks for first review and 2 weeks for the second for a total average of 24½ weeks. If we shift the capacity currently consumed by third and successive reviews forward to the first by using more robust walkabout procedures, it appears feasible to achieve 6 week first reviews, a 20% improvement.

Further, TLC experience finds that when intake standards are tightened, applicant response times on correction cycles accelerate on order of 75%. Similarly, design at submittal is generally more mature when a premium track is selected. We measure a 50% faster (3 week) applicant response when third-party review is chosen in Kirkland (Fig. 12).

An approval process consisting of:

- A 6 week first review (all departments contributing to one comment letter),
- 3-6 weeks of applicant redesign with one comprehensive pre-revision submittal,
- Followed by a final 2 weeks for a second review,

provides for 11-14 week approval, about half of the current 24½ weeks.

Further, the Planning/Forestry and Fire/Public Works tracks that pace today’s standard and third-party reviews respectively should be separated into four parallel tracks, three when special residential fire suppression review is not triggered by staying under 3,600 sq ft.

---

\(^4\) Or the four corners of the smallest rectangle that could be drawn around the proposed building, a good staff idea.
Today’s standard planning review is assigned on the first Friday following receipt of routed plans. Within next week or so, as other workload allows, the assigned planner gives a cursory look and forwards it to forestry requesting comments 1-2 weeks before the 7 week turnaround target. Once the target date nears, the plans are requested from forestry if they’re not already returned (they are usually back by then) and planning first-review begins.

We deduce then that typical forestry first-reviews take on order of 4-5 weeks. Even if we delay planning review until forestry is completed, if forestry received its own routing, it stands to reason that a combined 6 week or faster outcome is achievable. If planning and forestry reviews occurred in parallel, the first step toward a 4 week review is in hand. Self assignment of planning review, like done in the Building department could add a little more margin.

A similar approach for fire review benefits similarly.

**First Review Intake**

Requisite are intake procedures and checklists that define what staff needs for conclusive first review (most of the time, unusual situations will remain). Then, the walkabout procedures must check item by item to ensure this required content is provided. Analysis indicates it’s principally the Forestry, Planning and Public Works screening that needs bolstering. Most Building reviews are settled today by the second review. These checklists should be embedded in the application form so it’s very clear what the applicant must provide for a successful intake. Staff should circle any missing checklist items and explain how the applicant can be successful on his or her next attempt. Wisely, the walkabout process is already in place; this improvement builds on that structure.

**Comprehensive Pre-Revision Intake**

Further, the pre-revision should pass intake muster too. Applicants commonly hire architects, engineers and arborists who provide them revisions focused on the comments that specifically applied to their work. In turn, it’s common for an applicant to submit these piecemeal as received from their experts. This ratchets numerous cycles across the departments, contributing to long timelines. An intake test should confirm that all items on the overall first-review comment letter were addressed in one comprehensive pre-revision submittal. This can be facilitated by numbering each comment on the single, comprehensive first-review comment letter so the applicant can indicate on the pre-revision submittal form (or via attached responses from their experts) how each comment was addressed. The departments already use a pre-revision submittal form. This could be checked at one station or by walkabout.

Controlling pre-revision intake should often enable conclusive second reviews. Only stray redlines should remain, tapping today’s cycle-saving technique.

---

5 Though Public Works appears to be using good intake process controls (intake, debrief, queue consistency) now.
With a robust intake process, more applications are approvable on the first pass. This happens occasionally today in Kirkland. Most of the complicated new-home submittals that Kirkland economics are driving will generally require two reviews.

Note that additional parallel tracks mean more duping. Departmental redlines should be consolidated onto two master sets by a technician. This pair should be back-checked by the Building plans examiner to ensure a cohesive result prior to issuance. Redline text and descriptions, not always legible today, must be clear and concise for this to be successful.

4. Increase Forestry and Engineering Capacity

For an even higher level of service, the departments should add capacity in two key areas. Leveraging the first three recommended improvements, a 4 week first review and a 2 week second review may be achievable. This would place Kirkland at the level of service most requested by regional applicants.

This would necessitate faster Forestry and Public Works reviews.

Forestry today is a ¾ FTE position. Boosting it to full-time adds 33% more capacity. That could move 4-5 week reviews to 3-3.75 weeks. It is likely that Planning would need to be parallel with Forestry review based on how integrated tree plans perform in practice.

One Public Works specialist conducts all SFR reviews today. Standard and third-party review (all Public Works review is in-house) averages 6½ and 5½ weeks respectively (Figs. 11 and 12). Adding a second reviewer could halve these times once the learning curve is climbed.

TLC experience suggests it’s a yearlong process to bring a new reviewer up to speed in most engineering departments. Reallocation of an existing Public Works employee would greatly accelerate this learning curve but the impact to other responsibilities such as plat or civil plan review is beyond the current scope of analysis.

A second reviewer would also progressively share counter inquiry, walkabout, and field responsibilities, creating times of the week when each reviewer can be largely uninterrupted, boosting productivity. These additional benefits would be forgone if the departments seek outside consultants for Public Works review instead. Further, TLC experience shows that local experience is vital for reconciling the myriad of factors that could warrant variations in (or deferral of) frontage design. For instance, the tree ordinance embraces variances for tree preservation. The second reviewer also enables reliable 2-week third party review, a reasonable expectation of applicants choosing this path.

The current contention over tree plans on top of the recommended migration to integrated plans suggests forestry should remain in-house too to facilitate applicant coordination. One applicant advised that current third-party reviewers are harder to access than in-house staff.
As in-house performance catches up with third-party pace, the premium option would become less attractive. This would likely shift more reviews in-house. Thus team capacity needs to be monitored. Planning could need additional capacity to deliver consistent 2 week second reviews.

One alternative the City could consider is adding a performance guarantee to third-party review.

If it’s demonstrated that consistent 3-week and 2-week cycle times are delivered more than on average, but closer to 90-95% of the time, the City could consider adding a guarantee with partial or whole refunds when deadlines are missed. Mailers pay nearly an order of magnitude more postage for the predictability of express mail guarantees. Tacoma offers a money-back guarantee.

The City should tap technicians to assemble, send out and dup final redlines from third-party reviewers too. This takes the burden off of the plans examiners as their Planning, Forestry, Public Works and Fire counterparts increase performance.

Note that recommendations have frequently tapped department technicians for technical and administrative contributions. This is an excellent use of technician skill sets and a valuable contribution to organizational performance. It does add up though. As the implementation proceeds, additional technician capacity may be needed. Some applicants and several staff members noted the techs are very busy.

5. Collocated SFR Review Team

As performance targets tighten, the need for interdepartmental coordination rises. A collocated work team, a concept posed by the Building department, would make this easier. In this approach, the offices of department personnel conducting SFR review are located in a common area, generally with a space for ad hoc collaboration. Reviewers utilize this proximity to coordinate approaching deadlines, triage incoming plans, cross train, and stage their work in the most efficient manner. Backlog is immediately apparent across the team too: it’s all right there in their area. This also tends to melt any interdepartmental conflicts arising from misunderstanding each other’s roles and challenges.

Organized in this way, the collocated SFR team could centralize the walkabout process too.

The departments could complement it with a rotation program that introduces all or most of the team over time to the collocated multi-disciplinary team model.

But, this can break down if some participants also work other tasks, like plat review or code enforcement that introduce hard to control “outside” constraints on team workflow. It also suffers if department representatives are less skilled (not a problem here at this time). Organizations with recent turnover do better with functional collocation, where planners can learn from planners, engineers from engineers, etc.
A collocated SFR team is recommended unless dedicating department staff to purely SFR review jeopardizes broader responsibilities on land use, civil plan, long-range, or other departmental tasks.

**6. Provision for Greater Demand**

The City is already planning to scale up its operation by two-thirds to serve the annexation area. But demand on staff will increase further as a result of these recommendations. As indicated, the attraction of the third-party review option will decline as in-house review performance improves. Two thirds of new-home applicants chose third-party review this year. Therefore, in-house review volumes stand to rise by as much as two-thirds in the months ahead.

This will increase backlogs in all departments, which if unaddressed would degrade review timelines again. Forestry and Public Works would see the greatest increase in backlog (hence timelines) as their capacity paces current review. If total SFR application volumes are expected to hold steady in 2008, a third Public Works reviewer (a 50% capacity increase, sooner rather than later due to the inherent learning curve) and an additional part-time Forester (50% increase) is warranted.

Under the same assumptions, Planning and Building backlogs will also rise.

For Planning, the current ½ FTE for third-party review via staff overtime and occasionally an outside consultant should be converted into an additional part-time position. A long-term reliance on overtime is very sensitive to staff member availability.

For Building, the two main SFR reviewers will correspondingly need a third.
Tracking System Recommendations

As indicated, the software underlying the current permit tracking system may require replacement as industry consolidation may retire Tidemark Advantage®. When evaluating replacement systems, TLC experience recommends the following functionality and rigor:

1. All reviews and inspections are tracked in the system (building permits, civil plan reviews, long-range planning, capital improvement programs, land use actions, etc.)
2. All users input all required fields, real-time, all the time
3. Ability to query related permit cases on a given project (building, civils, land use, etc.)
4. All users can query for their assigned review tasks and see them all listed in priority order
5. Reviews on-hold awaiting resubmittal are clearly differentiated from in-work reviews
6. Inspection results can be entered quickly/real-time and daily inspection planning is easy
7. Management reports show total work-in-progress, aging, unassigned work, and trends
8. Management has the training and tools necessary to create ad hoc reports
9. Online status that indicates when the main review steps occur, and if on hold, why
10. Online inspection results
11. Detailed enough permit templates to generate online status changes on a frequent basis.
    If online status remains static for too long, applicants will interpret it as a problem and call for status. This defeats a major benefit of posting status online. Automatically displaying the current performance target for the type of application queried helps.
12. Consider integrating with the broader City systems. Economies of scale may be achievable if integrated with finance, capital improvement and other city systems. Note that if this includes common law enforcement networks, extra firewall protections may be needed.
13. Onsite, real-time Information Services support. Don’t fully outsource the expertise you need to keep your system operational and incrementally enhanced. Also appoint an in-house system administrator to manage enhancement and bug lists and help leaders standardize user practices. Jurisdictions that miss these steps generally have degraded functionality over time and more runtime irregularities.

Conclusions

The assessment identified a quality review with several strengths including best-in-class online offerings through MyBuildingPermit.com and Kirklandpermits.net, a superior system for managing design revisions during construction, and exceptional Building inspection service. Applicants complimented helpful techs, service-oriented inspectors and skilled building plans examiners.

Six recommendations for improvement were offered, principally to eliminate a time-consuming pattern of planning and forestry correction cycles, the primary complaint of Kirkland applicants.

Analysis indicates and applicants confirm that the constraint of the Single Family Residential (SFR) process is Planning/Forestry approval. This constraint is eased by third-party review,
limited in this case by Public Works approval. This is caused by extensive rework to reconcile an imprecise basis of height calculation, disputes over tree retention, and insufficient intake completeness screening.

Recommended improvements have the potential to largely double SFR performance, collectively reducing 7½ week first-reviews and 2 week successive reviews to 6 and 2 weeks respectively, or 4 and 2 weeks with added personnel, depending on the level of service the City wishes to set. A reduction to two review cycles trims total-elapsed timeframes similarly.

**Next Steps**

The next step is a City decision on how it wishes to move forward with these recommendations followed by implementation planning, launch and project management of the initiative. Follow-on phases for assisted SFR implementation, land use and civil plan process assessment, and tracking system assistance are also recommended.

**Thank you**

The Latimore Company thanks the City staff and participating applicants for their open and constructive contributions to this assessment. TLC very much appreciates this opportunity to serve The City of Kirkland and offer these recommendations.

TLC would be delighted to help the City implement these recommendations and improve the predictability, efficiency and collaboration of single family residential development services.

Regards,

Kurt Latimore, Member
*The Latimore Company, LLC*