Chapter 6. Implementation

Funding and Managing Infrastructure; Development Standards

Overview

This chapter presents two categories of material, each building from a combination of the land use, drainage, transportation, and water and wastewater chapters: strategies for funding and managing Hillside infrastructure and policies for improved Hillside development standards.

This chapter sets out two major elements that will guide the implementation of the plan: strategies for infrastructure funding and management, and for improved development standards.

Part 1: Funding and Managing Infrastructure

Residential growth on the Hillside and throughout Anchorage is straining the Hillside's traditional, neighborhood-by-neighborhood approach to constructing and maintaining drainage, roads and trails, and managing water quality. Hillside residents like the low costs and local accountability of the existing approach. At the same time, it is recognized that the area faces growing infrastructure problems, including ice-covered roads in winter, flooded basements and roads in the summer, congested intersections, overcrowded trailheads, and limited emergency access. These concerns will increase as the Hillside adds an additional 5,000 dwelling units.

The Hillside District Plan requires the creation of a new funding and management entity which, for the first time, will establish a district-wide means to address drainage, road, and trail issues. Doing nothing (that is, continuing to rely on the existing system of Local and/or Rural Road Service Areas), will not solve drainage issues and is not acceptable. The Plan currently recommends a hybrid approach: a new Hillside district-wide service area, similar to the Chugiak-Birchwood-Eagle River Rural Road Service Area (CBERRRSA), along with the retention of existing LRSAs. Other alternatives include a new drainage authority or a combination of a road service area and a separate drainage authority. A drainage authority has more flexibility in determining how fees are collected.

In addition to the district-wide roads, trails, and drainage service area, the HDP calls for the following:

- To improve access to Chugach State Park and reduce the impacts of the growing use of trails and trailheads in neighborhoods near the park, the plan proposes a new Bowl-wide approach to funding needed Chugach State Park access improvements.

Bear Valley with Chugach State Park and Ptarmigan Peak beyond.

- To ensure ongoing protection of Hillside water quality, the plan proposes a Hillside Well Water Protection Program.
- The HDP also recommends extending the requirement for building permits to the entire Hillside District. Currently, the southeastern portion of the Hillside is excluded from building permit requirements. Building permits are needed in this area for the same reason they are required in the rest of the Anchorage Bowl: to protect housing values, as well as life and property.

Part 2: Development Standards

Building conditions on the Hillside are different than the rest of the Anchorage Bowl, particularly at higher elevations and in areas with steeper slopes. As a result, the plan calls for new development standards and procedures, summarized below:

- Change requirements for subdivision submittal material, to provide better up-front understanding of drainage, vegetation, and other environmental site characteristics.
- At the scale of subdivisions, establish new standards to improve drainage management and retain important natural features that cross multiple development tracts; for example, corridors for drainage, roads, and trails.
- At the scale of individual lots, establish new standards to reduce development impacts (e.g., to reduce runoff by retaining natural contours and natural vegetation).

Part 1:

Infrastructure Funding and Management

Context: Planning Issues Summary

A Hillside Citizen Advisory Committee Meeting.

Road Maintenance – The "Good Old Days"

The Hillside developed slowly as homesteads and large lots were subdivided and sold. Services and traffic were limited, and the area had a rural or low-density suburban character. Road standards were not institutionalized or met, which was perfectly acceptable to residents who were satisfied with slower speeds and non-paved roads to access their homes from the state-maintained arterials and collectors. In most cases, maintenance on these local, residential roads has been limited to sanding, plowing, and only irregular grading. These responsibilities have been carried out by municipally-sanctioned Local Road Service Areas (LRSA) and Rural Road Service Areas (RRSA) or taken up by neighborhood groups or homeowners associations without government involvement. As the Hillside has continued to grow, the limitations to this existing system have become more apparent, with congested intersections, unsafe streets, cut-through traffic, and inadequate emergency access. In general, Hillside road-related expenditures repeatedly address symptoms of substandard design, without solving underlying causes.

Drainage

The approach to managing drainage on the Hillside has been even less structured than the approach to managing roads. Unlike the rest of Anchorage, which raises money for drainage improvements through the Anchorage Roads and Drainage Service Area (ARDSA), the Hillside has no coordinated means to manage storm water runoff over the entire area. Where Limited Road Service Areas exist, they have worked on localized drainage-related issues as an unofficial add-on to their road maintenance responsibilities. Large portions of their limited budgets, particularly in the southeast Hillside, are spent ripping ice off roads and maintaining roadside drainage ditches, rather than dealing with root causes of drainage problems. Storm water runoff continues to increase, and icing problems are worsening, particularly as development moves into upper elevations of the southeast Hillside with its steeper slopes and shallower soils. Solving these issues requires a new approach, working at the scale of entire watersheds, rather than subdivision by subdivision.

Spring runoff crosses a dirt road in the BLM lots area.

Existing Road Service Areas

Of the road miles within the HDP, 27 percent of the miles are served by homeowners associations or other neighborhood groups. 54 percent of the Hillside area is within the Anchorage Roads and Drainage Service Area (ARDSA) or a limited or rural road service area, with most of this category made up by LRSAs or RRSAs (Map 6.1).

Trails

Construction and management of trails has been similarly informal and uncoordinated. Local residents walk along quiet residential roads. Residents and visitors ramble on traditional routes that cross undeveloped private property. Roadside trails have been built along a few major roads. Three state-managed trailheads provide access to Chugach State Park, along with a handful of informal roadside pullouts. Casual trails worked when levels of use were low, but this approach is breaking down with steadily increasing trail use. Several trails and trailheads that were only used by locals are becoming destinations for people from all over Anchorage, resulting, in some areas, in conflicts between trail users and adjoining landowners. While the State and Municipality each have some responsibilities for trail issues, no system is in place to systematically address trail construction, maintenance, and management.

Water and Wastewater

The State and Municipality currently regulate the installation and operation of water and wastewater systems of the Hillside. With the expectation that the large majority of the Hillside will continue to rely on on-site wastewater systems and that the Hillside will continue to grow, improved programs are needed to monitor well water quality and improve standards for the installation and use of on-site and neighborhood wastewater systems.

Problems Are not Uniform

The challenges outlined above are most evident in and near the southeastern section of the Hillside. Road, trail, drainage and water quality issues are less severe in other parts of the Hillside; and the pressure for new solutions is greatest in areas where there has been more recent development. As the survey showed, most residents are satisfied with existing levels of service.[1]

Summary: Need for District-wide Infrastructure

Hillside subdivisions that once had just a few homes now have many. New, higher-density subdivisions have been developed, along with new schools to support this growth. These changes will continue into the future.

The set of problems outlined above (through-traffic, congestion, flooded basements, glaciating roads, overused trailheads) is symptomatic of a larger underlying problem. The current

1. Note:

HDP survey results:

"Is ice build-up on roads in your neighborhood a problem?"

- Problem: 20.8 percent
- Not a Problem: 58 percent

"Are drainage and runoff in your neighborhood a problem?"

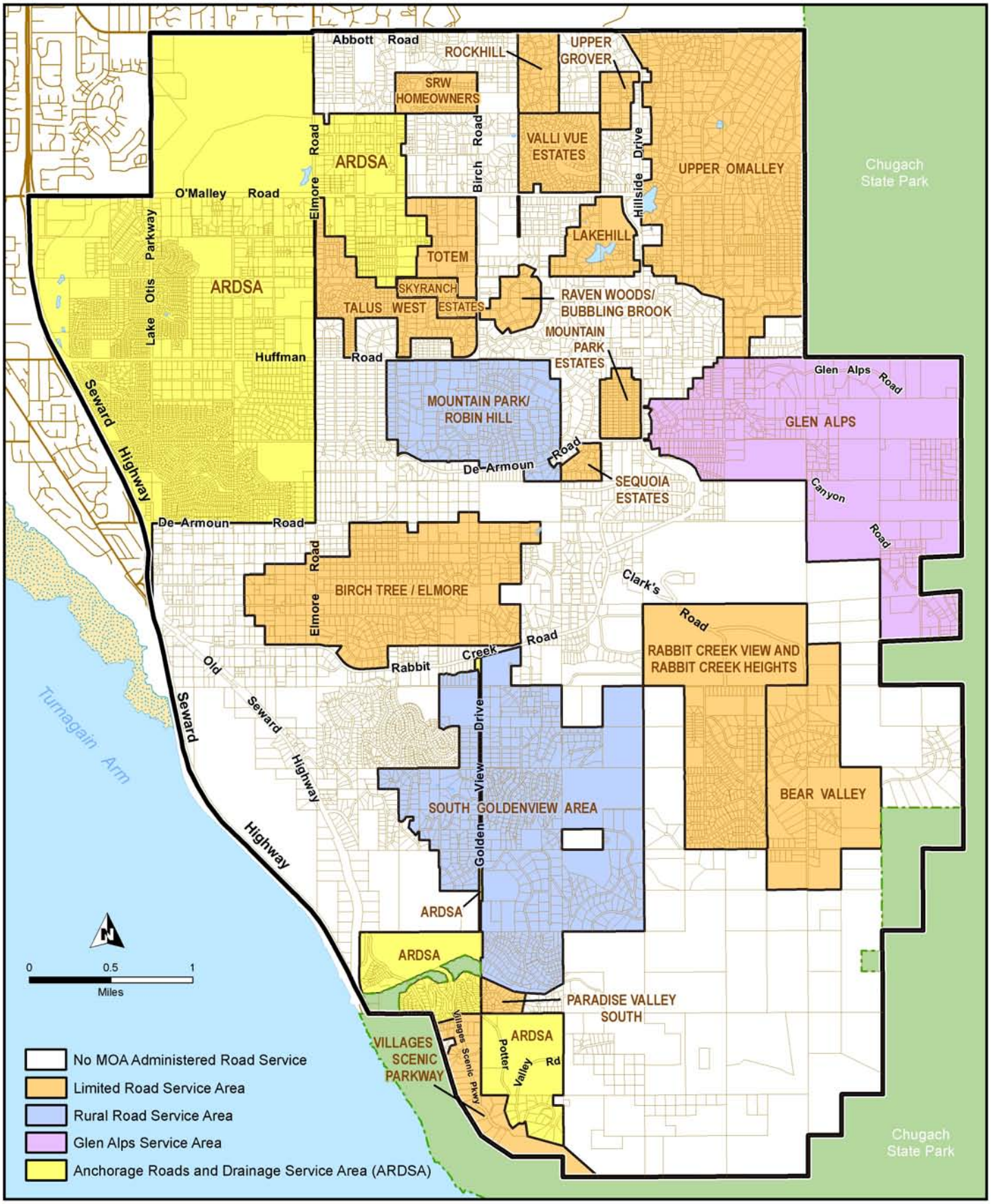
- Problem: 18.8 percent
- Not a Problem: 76.6 percent

These opinions may change as the Hillside adds another 5,000 dwelling units.

Map 6.1

Existing Road Service Areas

Hillside District Plan



The Glen Alps trailhead provides access to Powerline Pass Valley, Chugach State Park.

approach to infrastructure on the Hillside is disjointed and lacks mechanisms for coordinated planning, maintaining, and upgrading road, drainage and trail infrastructure at a community-wide scale. Existing mechanisms to plan, pay for, and maintain shared infrastructure focus on small sub-districts of the Hillside, and consequently are limited in their ability to respond to current and future needs. The result is that subdivisions either are approved without solving these issues (as many have argued was the case for Prominence Pointe) or subdivisions which could be approved are halted without a way to finance needed community-scale infrastructure. These issues will only intensify as the Hillside adds another 5,000 homes and 10,000 to 15,000 residents.

The remainder of this section outlines improved approaches to fund and manage growing demands on Hillside infrastructure.

Objectives for Infrastructure Funding and Management

The following objectives were developed to improve and/or create more effective and uniform levels of service on the Hillside. These objectives, which double as criteria for evaluating the various proposed options, were formulated working with the Citizen Advisory Committee for this planning process.

- Maintain Hillside resident control over improvements and costs.
- Provide greater capability to fund and authority to implement needed capital improvements at a watershed or community-wide scale.
- Provide for public health and safety; improve emergency access.
- Be realistic about the level of improvements; aim for modest and affordable infrastructure.
- Recognize that infrastructure needs vary across the Hillside.
- Create an equitable system so that local costs are charged to those who create them. In some instances, state or federal funds are available to supplement local funding.
- Phase improvements; wherever practical, delay or avoid major capital projects by repairing or upgrading existing infrastructure.
- Provide for efficient service delivery and administration.

- Protect the natural environment of the Hillside.
- Leverage funding; supplement Hillside dollars with state, municipal, and other funding sources from outside the Hillside.
- Start slow; accept that many residents are satisfied with the existing service structure and that establishing a new funding and management entity will take time, likely at least a year.

BLM lots, located between DeArmoun Road and Rabbit Creek Road.

Goal and Policy Summary: Part 1

GOAL - 14	
Primary Policy	**Implementation**
14-A. Establish a new Hillside District funding and management entity to manage and help to finance roads, drainage, built/green infrastructure, watershed protection and aquifer recharge, and trails at a watershed- and/or community-wide scale.	Anchorage Assembly, MOA Project Management and Engineering Department (PM&E). *A change in service area requires a vote of the service area.*
14-B. Extend the Anchorage Parks and Recreation Service Area boundary to include the entire Hillside District as well as the initial mile of Chugach State Park.	Anchorage Assembly, MOA Parks and Recreation Department, MOA Legal Department, MOA Planning Department. *A change in service area requires a vote of the service area.*
14-C. Create a new funding and management program targeted at improved Chugach State Park access with trailhead and parking facilities.	Anchorage Assembly, MOA Parks and Recreation Department, MOA Legal Department, MOA Planning Department.
14-D. Establish a Hillside Well Water Protection Program and new programs and standards for managing neighborhood wastewater systems.	Anchorage Assembly, Hillside residents, MOA On-site Services Section.
14-E. Contract the boundary of the AWWU Certificated Service Area in the Hillside District to match the Maximum Perimeter of Public Sewerage.	Anchorage Assembly, Anchorage Water and Wastewater Utility (AWWU), and the Department of Health and Human Services (DHHS).
14-F. Extend the Anchorage Building Safety Service Area, and with this, the requirement for building permits, to the entire Hillside District.	Anchorage Assembly, MOA. *A change in service area requires a vote of the service area.*

Funding and Management Entity

Policy 14-A

Establish a new Hillside District funding and management entity to manage and help to finance roads, drainage, built/green infrastructure, watershed protection and aquifer recharge, and trails at a watershed- and/or community-wide scale.

Background

The Hillside District Plan requires that a new management and financing mechanism be established to pay for capital improvements and maintenance at a higher level of service than exists on the Hillside today. The current recommendation is to establish the full Hillside District (excluding areas already in ARDSA) as a unified Hillside Road, Drainage and Trails Service Area (HRDTSA). LRSAs, RRSAs, and independent areas will be retained; and a coordinated, district-wide management system will be established to manage the road, trail and drainage systems on the Hillside. State-owned streets and rights-of-way would continue to be maintained by the State of Alaska, unless a separate maintenance agreement with the new Hillside management entity was in place.

The specific details of the best approach to creating a funding and management entity for Hillside roads, trails, and drainage will be worked out after the Hillside District Plan is adopted, working with Hillside residents and landowners. Doing nothing (that is, continuing to rely on the existing system of Local and/or Rural Road Service Areas) will not solve drainage issues and is not acceptable. The Plan recommends a hybrid approach: a new Hillside district-wide service area, similar to the Chugiak-Birchwood-Eagle River Rural Road Service Area (CBERRRSA), along with the retention of existing LRSAs. Establishing a new service area would require that a majority of voters within the proposed service area pass the enabling ordinance on a municipal ballot. Other alternatives include a new drainage authority, or a combination of a road service area and a separate drainage authority. A drainage authority allows fees to vary as a function of the varying drainage impacts of specific parcels. (This option is described in the sidebar on page 6-9.)

The currently proposed HRDTSA would be modeled in part on the successful Chugiak-Birchwood-Eagle River Rural Road Service Area (CBERRRSA). The "HRDTSA" would have jurisdiction over larger roads (with the exception of state-owned

roads, unless agreed upon by both parties), drainage, and trail capital improvements within the entire Hillside District. Local neighborhood road maintenance would remain the responsibility of existing LRSAs and independent service groups, although the HRDTSA could be made responsible for road maintenance on selected roads or for special situations that LRSAs and independents would be unable to address. All municipally owned public roads, drainage, and trail facilities within the area would be subject to the authority granted to the new management entity. Service provision would be set to reflect the most equitable, resident-supported funding and service strategy. Taxes raised would be outside the MOA tax cap, but may be subject to the service area's own tax cap.

The Citizen Advisory Committee has emphasized the need for Hillside resident control. This would be achieved, as is done in CBERRRSA, by having the service area guided by a local board. Like in Eagle River, the HRDTSA board would prepare and submit an annual budget to the municipal administration and the Assembly for approval; establish policy guidelines and priorities for capital projects and maintenance; review and comment to the Anchorage Assembly on all proposed capital projects for the improvement of road, drainage and trail facilities under the jurisdiction of the service area; and have limited authority to authorize work in emergency situations.

Capital and maintenance funds for services would be collected from all service area property owners as a dedicated levy on their property tax bill. The mill levy amount would be set by ballot in the ordinance establishing the HRDTSA. The initial ordinance establishing the service area could set a maximum mill rate, as was done for CBERRRSA.

Roads

Under the recommended approach, the HRDTSA Board would have authority over primary roads, providing maintenance and capital improvements to those roads. Existing LRSAs and RRSAs within the service area would continue to operate as they do today, providing operations and maintenance services to neighborhood and secondary roads. Areas outside LRSAs would remain independent. LRSAs and independent road service groups would be represented on the unified HRDTSA Board.

Many of the primary roads on the Hillside are part of the state road network. State roads within the Hillside service area would remain under state jurisdiction; the State would continue to be

Alternative to a Hillside Service Area: A Hillside Drainage Authority

As noted in the text, the plan is clear that some form of funding and management entity will be developed for the Hillside. The plan's current recommendation is to use the service area approach. After the plan is adopted, the Municipality, working with Hillside residents, will do more detailed work needed to flesh out the service area concept, or another alternative, to develop an approach that best meets the needs of the Hillside and the Municipality as a whole.

One alternative to the HRDTSA for drainage funding and management is an enterprise or special assessment district operating as a stand-alone Hillside Drainage Authority (i.e., without responsibility for roads or trails). This Authority could provide drainage management planning, maintenance, operations, and construction, if the proposed combined service area is not established by Hillside residents. This alternative would provide watershed-based drainage management using a "fee for service" approach where the cost causer is the cost payer; that is, landowners only pay for the demand they place on the drainage system. The fee structure for the Drainage Authority would be established through a rate study based on the amount of impervious surface of individual parcels, and on public infrastructure. It may also incorporate an impact fee formulated to accommodate new development and equitably distribute infrastructure costs. These revenues would be leveraged with grants, loans, state appropriations, and other project funds to meet community-requested service levels.

(continued on following page)

Alternative to a Hillside Service Area

(continued from previous)

The Drainage Authority would receive guidance typical of enterprise operations from a local board of community, technical, and professional representatives. This Drainage Authority could work cooperatively with a service area focused on roads and trails.

A drainage authority is a powerful and proven mechanism for managing drainage, and provides the benefits of fairness, equitability, problem-specific focus, and opportunities for incentives. Key program managers in Anchorage prefer this enterprise method of funding and management to the service area approach. It may be possible to integrate the benefits of the drainage authority approach with the benefits of the road and trail service area approach. As the Municipality and Hillside residents work to develop the best Hillside management entity and funding approach, this option should be looked at closely, as it may provide the best way to manage Hillside drainage issues.

What Will It Cost Me?

The tables (6.2 and 6.3) on the following pages show the amount of money that might be raised on the Hillside at different mill rates. The second table shows what the annual property tax would be on homes of different values at these different rates.
For example, with a mill rate of 1.78, a possible new Hillside-wide capital and maintenance service area would raise $3,082,244. At this rate, a home assessed at $350,000 would pay $623 a year in property taxes. This rate combines an increment of funding for capital projects and for maintenance (the latter increment is comparable to what is charged in existing LRSAs; for a $350,000 house, this is $350 a year at 1 mill).

responsible for capital improvements and maintenance on these roads. One of the major benefits of creating a Hillside service area is the ability to raise local funds to leverage state capital funding. The system for setting priorities for expenditures of state dollars greatly favors areas that make a local contribution to state capital projects. Rural road standards for areas like the Hillside would have to be clarified prior to the creation of the HRDTSA so that expectations regarding road standards are clear, and the different road standards desired by local residents are understood and respected. (A map and discussion of Primary and Secondary Roads is included in Chapter 4. Transportation.)

Trails
Under the unified service area approach, the service area is responsible for construction and maintenance of all major trails, including road-side trails and those away from roads. This is generally similar to the Chugiak-Birchwood-Eagle River Rural Road Service Area, which includes trails as part of their roads and drainage service area. In the Eagle River area, however, off-road trails are managed through a separate service area specifically for parks and recreation. Under the CBERRRSA approach, roadside trails are managed through the roads and drainage service area; other trails and parks are addressed through the separate park and recreation service area.

Drainage
The new HRDTSA would be tasked to develop, implement, and provide ongoing maintenance and operations of watershed drainage plans and the drainage component of the Hillside built/green infrastructure program outlined in previous chapters. The HRDTSA would work with the Municipality to perform watershed drainage planning, resolve drainage-associated regulatory problems, and prioritize community needs for capital projects and maintenance. Drainage projects to be performed encompass many functions, including reserving natural drainage corridors, obtaining drainage easements to assure connectivity of the drainage system, providing or upgrading roadside drainage facilities (including ditches and piped infrastructure), developing regional detention areas, ensuring adherence to platted drainageways and greenbelts, identifying and providing notification regarding improperly functioning site controls, addressing downstream impacts, and acquiring development rights on key wetlands for storage and infiltration.

Table 6.2
Potential Annual Revenue of Hillside Road, Drainage, Trails Service Area

Potential Annual Revenue of HRDTSA Under Various Mill Rate Options **								
	EXISTING MILL RATE	NUMBER OF PARCELS	TAXABLE VALUE*	LOWEST LRSA	MEAN HDP	CBERRRSA	AVERAGE OF HIGHEST THREE	MILL RATE REQUIRED TO GENERATE ~$1,000,000 HILLSIDE-WIDE
				MILL RATE OPTION (1.00)	MILL RATE OPTION (1.78)	MILL RATE OPTION (1.85)	LRSA MILL RATE OPTIONS (2.5)	
Bear Valley LRSA	1.5	122	$25,024,790	$25,025	$44,431	$46,296	$62,562	0.46
Birch Tree Elmore LRSA	1.5	497	$146,560,420	$146,560	$260,214	$271,137	$366,401	0.46
Glen Alps SA	2.75	397	$84,939,290	$84,939	$150,808	$157,138	$212,348	0.46
Lakehill LRSA	1	74	$27,976,200	$27,976	$49,671	$51,756	$69,941	0.46
Mountain Park Estates LRSA	1	105	$27,380,700	$27,381	$48,614	$50,654	$68,452	0.46
Mountain Park Robin Hill LRSA	1.3	270	$81,108,520	$81,109	$144,006	$150,051	$202,771	0.46
Paradise Valley South LRSA	1	42	$10,138,100	$10,138	$18,000	$18,755	$25,345	0.46
Rabbit Creek LRSA	2.5	347	$27,263,640	$27,264	$48,406	$50,438	$68,159	0.46
Raven Woods LRSA	1.5	33	$10,515,200	$10,515	$18,669	$19,453	$26,288	0.46
Rockhill LRSA	1.5	62	$25,710,600	$25,711	$45,649	$47,565	$64,277	0.46
Sequoia Estates LRSA	1.02	25	$13,109,700	$13,110	$23,276	$24,253	$32,774	0.46
Skyranch Estates LRSA	1.3	93	$20,898,100	$20,898	$37,104	$38,661	$52,245	0.46
South Goldenview RRSA	1.8	746	$238,604,558	$238,605	$423,636	$441,418	$596,511	0.46
SRW Homeowners LRSA	1.5	129	$27,914,050	$27,914	$49,561	$51,641	$69,785	0.46
Talus West LRSA	1.3	192	$50,973,468	$50,973	$90,502	$94,301	$127,434	0.46
Totem LRSA	1.5	67	$18,340,090	$18,340	$32,562	$33,929	$45,850	0.46
Upper Grover LRSA	1	37	$11,156,300	$11,156	$19,808	$20,639	$27,891	0.46
Upper O'Malley LRSA	2	699	$263,499,090	$263,499	$467,836	$487,473	$658,748	0.46
Valli Vue Estates LRSA	1.4	233	$72,099,550	$72,100	$128,011	$133,384	$180,249	0.46
View Point	2.59	24	$4,658,600	$4,659	$8,271	$8,618	$11,647	0.46
Villages Scenic Parkway LRSA	1	50	$10,838,800	$10,839	$19,244	$20,052	$27,097	0.46
Areas not in service areas (ad hoc)	0	3,321	$940,910,838	$940,911	$1,674,821	$1,740,685	$2,352,277	0.46
Total			$3,082,244,269	$3,082,244	$5,472,446	$6,780,937	$8,476,172	$~1,000,000

Note: This table is for comparison purposes only and may not reflect actual budget amounts. Taxable value is based on 2006 and 2008 data from the City Tax Assessor, Municipality Parcels GIS layer and LRSA GIS layer.

** Based on applying the mill rate to the taxable value. The CBERRRSA mill rate includes the mill rate for road and drainage maintenance (0.85 mills) plus the capital program (1.0 mills).

Table 6.3
Annual Taxes on Homes of Different Values

Cost Example				
TAXABLE VALUE	LOWEST LRSA	MEAN HDP	CBERRRSA	AVERAGE OF HIGHEST THREE
	MILL RATE OPTION (1.00)	MILL RATE OPTION (1.78)	MILL RATE OPTION (1.85)	LRSA MILL RATE OPTIONS (2.5)
$100,000	$100	$178	$185	$250
$150,000	$150	$267	$278	$375
$200,000	$200	$356	$370	$500
$250,000	$250	$445	$463	$625
$300,000	$300	$534	$555	$750
$350,000	$350	$623	$648	$875
$400,000	$400	$712	$740	$1,000
$450,000	$450	$801	$833	$1,125
$500,000	$500	$890	$925	$1,250
$550,000	$550	$979	$1,018	$1,375
$600,000	$600	$1,068	$1,110	$1,500
$650,000	$650	$1,157	$1,203	$1,625
$700,000	$700	$1,246	$1,295	$1,750
$750,000	$750	$1,335	$1,388	$1,875
$800,000	$800	$1,424	$1,480	$2,000
$850,000	$850	$1,513	$1,573	$2,125
$900,000	$900	$1,602	$1,665	$2,250
$1,000,000	$1,000	$1,780	$1,850	$2,500

The CBERRRSA mill rate includes the mill rate for road and drainage maintenance (0.85 mills) plus the capital program (1.0 mills).

Funding

The HRDTSA would be funded through a dedicated mill levy on the property tax bills of Hillside residents and would include separate components for operations and capital. The operations mill rate would be determined by a vote of Hillside residents to provide required maintenance services not handled by the LRSAs. The capital mill rate would be set to address the infrastructure needs identified in the transportation and watershed plans based on HRDTSA prioritization and timelines for completion. Capital improvements may additionally be addressed with funds acquired through development impact fees and through special assessment districts formed by majority vote to fulfill infrastructure needs in discrete areas, such as subdivisions. Combined revenues would be leveraged with grants, loans, and state appropriations to meet service levels.

Management

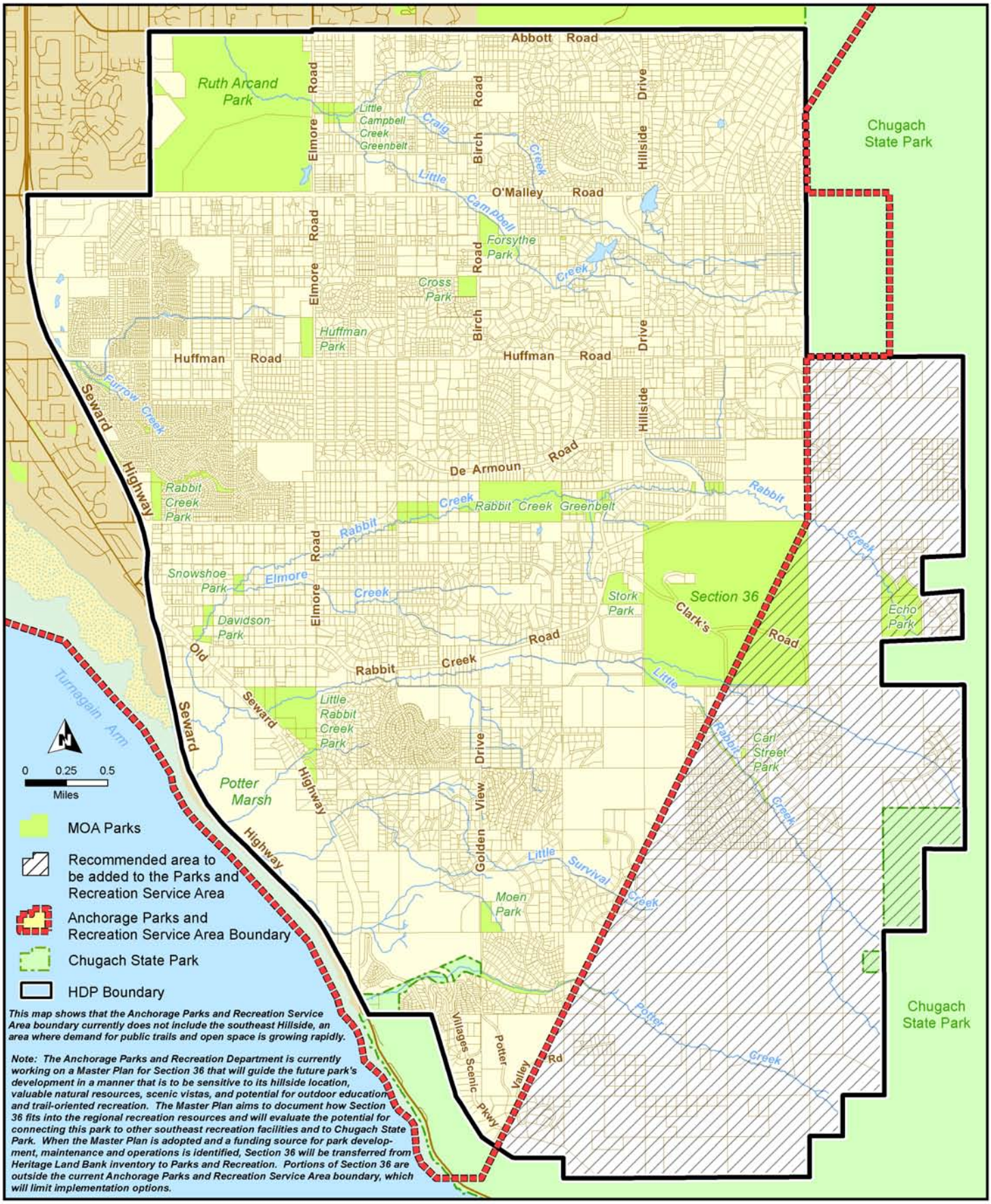
The HRDTSA would be overseen by a local service area board. The board would need to be structured to represent the interests of community councils, RRSAs and LRSAs, and independent road service groups. The specific structure would be determined working with the community and is subject to approval by the Anchorage Assembly. Work would be contracted out, much as is done through the LRSA/RRSA process today. Contracts would be overseen by the HRDTSA board, with dedicated administrative support by municipal staff, including assessment, contracting of services, and work oversight. Capital and maintenance funds for primary roads would be collected from all service area property owners as a dedicated levy on their property tax bill.

The specific steps to establish the proposed HRDTSA (or the drainage authority alternative) will require that additional work be completed after the approval of this plan. This would involve local residents and existing service area boards working through all the specifics of the new management entity, including estimated capital and operations costs, an acceptable mill rate, and the specifics of the management and funding structure. (Maps and a discussion of currently identified priority transportation and drainage projects can be found in Chapter 3. Drainage and Chapter 4. Transportation.) As stated previously, the level of funding for a local service area would be set by the HRDTSA Board, and the service area would only come into existence if approved in a local vote.

Map 6.4

Anchorage Parks and Recreation Service Area

Hillside District Plan



This map shows that the Anchorage Parks and Recreation Service Area boundary currently does not include the southeast Hillside, an area where demand for public trails and open space is growing rapidly.

Note: The Anchorage Parks and Recreation Department is currently working on a Master Plan for Section 36 that will guide the future park's development in a manner that is to be sensitive to its hillside location, valuable natural resources, scenic vistas, and potential for outdoor education and trail-oriented recreation. The Master Plan aims to document how Section 36 fits into the regional recreation resources and will evaluate the potential for connecting this park to other southeast recreation facilities and to Chugach State Park. When the Master Plan is adopted and a funding source for park development, maintenance and operations is identified, Section 36 will be transferred from Heritage Land Bank inventory to Parks and Recreation. Portions of Section 36 are outside the current Anchorage Parks and Recreation Service Area boundary, which will limit implementation options.

Parks and Recreation Service Area Boundary

Policy 14-B

Extend the Anchorage Parks and Recreation Service Area boundary to include the entire Hillside District, as well as the initial mile of Chugach State Park.

Background

The HDP recommends extending the existing Anchorage Parks and Recreation Service Area boundary to encompass the entire Hillside, and also extending this boundary approximately one mile into Chugach State Park. The current boundary arbitrarily excludes a large, important area (the southeastern portion of the Hillside) where recreation use is growing and trail-related improvement needs are greatest. (See Map 6.4 Parks and Recreation Service Area.) For example, about one-third of "Section 36," a 640-acre municipal parcel designated for recreation use, is out of the current recreation service area. Extending the service area boundary to include the entire Hillside will allow the Municipality to generate and spend funds for projects and actively manage trails and other recreation uses in this increasingly popular recreation destination. Extending the boundary into the State Park will allow the Municipality to be able to partner with the State on projects of mutual interest.

Two specific actions are needed to carry out this objective. One is that residents and landowners within the proposed expanded service area boundary will have to vote in favor of the change. While a supportive vote will add a small increment of property taxes to landowners in this area, it will create the much-needed capacity to manage recreation issues in this area (for example, to empty trash cans and manage trailhead use). The second required action is a Bowl-wide vote, asking Anchorage voters to approve this change. The vote would offer two choices: leave the boundary as it exists today, or expand the boundary as outlined above. This provides an opportunity for Anchorage Bowl voters to provide for access projects and better management in an area that offers existing trails and parks and the potential for significant improvements.

Southeast Hillside is an area with rapidly growing recreation demands. The area is currently outside the Anchorage Parks and Recreation Service Area boundary.

In the Little Rabbit Creek drainage, the Hillside District Plan establishes an integrated system of drainage and open space corridors – a "built/ green infrastructure system" – to guide development on the large tracts of vacant private land in the upper valley.

Potter Valley Subdivision. This 1980s subdivision is served by public water and sewer and has an average lot size of less than a half an acre. Retention of areas of open space and careful grading has helped this project minimize runoff and visual impacts.

Chugach State Park Access

Policy 14-C

Create a new funding and management program targeted at improved Chugach State Park access with trailhead and parking facilities.

Background

The Hillside District Plan recommends that a new mechanism be created to raise funds from the Anchorage Bowl as a whole to improve and better manage access to Chugach State Park. Needed improvements include new trails, new trailheads, improvements to access roads, and improved trail management. Chapter 4. Transportation outlines specific priorities for trail-related improvements.

This recommendation is based on the fact that use of the State Park is generated from the entire Anchorage Bowl. No mechanism currently exists to improve access to the park. For at least the last two decades, the legislature has consistently provided very limited resources for needed improvements to state parks. It is not fair to ask for these improvements solely from new developments adjoining the park. It is also not reasonable to ask Hillside residents to solely fund road maintenance when, on some roads, a significant portion of the road use is for recreational access by people outside their neighborhoods. Given that solutions to access issues will require a combination of municipal and state action to the benefit of Anchorage residents, it is not reasonable to presume this responsibility should lie wholly with the State.

More work is needed to determine the most appropriate specific funding and management mechanism to improve Chugach State Park access. Options include:

- Revenue bond funding tied to a non-property tax revenue stream, such as bed tax. Under the revenue bond approach (in contrast to general obligation bond), improvements constructed with the funds do not have to be municipally owned, nor is a vote required.
- Assessing a property tax on an areawide basis (requires investigation to determine what categories of service are allowed areawide under the Anchorage Municipal Charter).
- A new Bowl-wide access district requiring a vote and using general obligation bonds.

The goal of any of these options would be the same: to generate funds for capital projects, as well as money to contribute annual revenue help with operations and maintenance. Funds raised through this bond would be administered by the Municipality working closely with the State of Alaska and affected private land owners and residents. No specific fund raising target has been set at this time. For reference, the recent $5,000,000 Anchorage Parks and Recreation Bond required an estimated annual tax increase of $3.40 for every $100,000 of property value.

Well Water Protection Program

Policy 14-D

Establish a Hillside Well Water Protection Program and new programs and standards for managing neighborhood wastewater systems.

Background

As outlined in Chapter 5. Water and Wastewater, the Hillside District Plan recommends the development of two new programs on the Hillside: one to help protect well water and the other to oversee neighborhood wastewater treatment systems. The estimated cost to the Municipality for the Development Services Department On-site Water and Wastewater Program to manage the Well Water Protection Program and oversight of the design, construction, and operation of neighborhood sewer systems is around $300,000 annually. Currently the On-site Water and Wastewater Program collects fees for the certification of on-site wastewater systems and permits for on-site water and wastewater systems. This plan recommends that these fees be augmented by additional fees of about $25 charged annually to owners of on-site systems and dischargers to neighborhood systems to recover the estimated $300,000 increase in annual cost to the On-site Water and Wastewater Program.

Examples of different approaches to site development. Lots that retain more natural vegetation and natural contours create fewer runoff problems and result in less change in the appearance of the Hillside; retaining natural vegetation immediately next to homes can increase risks of damage from wildfire. New standards in the plan aim to find a reasonable balance point on these issues.

View overlooking the Furrow Creek watershed area.

AWWU Certificated Sewer Boundary

Policy 14-E

Contract the boundary of the AWWU Certificated Service Area in the Hillside District to match the Maximum Perimeter of Public Sewerage.

Background

As outlined in Chapter 5. Water and Wastewater, as a result of the Hillside District Plan, AWWU will seek to withdraw areas of the Hillside from its State of Alaska-sanctioned service area as provided in its "Certificate of Public Convenience and Necessity (CPCN)." These areas would generally lie east of Elmore Road and north of Rabbit Creek Road, and generally east of Prominence Pointe and Paradise Valley subdivisions south of Rabbit Creek Road. The amended CPCN boundary would coincide with a new maximum perimeter of municipal sewerage that replaces the maximum recommended perimeter of public sewerage identified in the 1982 Hillside Wastewater Management Plan. This new sewer boundary would closely match the boundary of the service areas for water service provided by CPCNs issued to AWWU and the Potter Creek Water Company.

Past history suggests that, in the future, there may be requests to amend the updated state-sanctioned sewer CPCN boundary to provide municipal sewer service to nearby parcels for which on-site wastewater disposal is unavailable. Since 1982, there have been over a dozen amendments to the Maximum Perimeter of Public Sewerage as identified in the 1982 Hillside Wastewater Management Plan. These boundary changes have traditionally been approved by the Assembly based on a petition through the Anchorage Planning and Zoning Commission by property owners seeking the service. A similar petition process will continue to be available with respect to the new Maximum Perimeter of Public Sewerage but will need to be augmented by subsequent action amending the state-sanctioned CPCN. Following Assembly action, at the request of the property owner(s), AWWU would file an application to amend the boundary with the Regulatory Commission of Alaska. AWWU must present arguments in its application that it is "fit, willing, and able" to re-assume this portion of the service area, and the Assembly action recommending the boundary change will be a mandatory element of the petition as well. Costs of implementing the CPCN boundary revision will be borne by the property owners seeking service.

Building Safety Service Area

Policy 14-F

Extend the Anchorage Building Safety Service Area and, with this, the requirement for building permits to the entire Hillside District.

Background

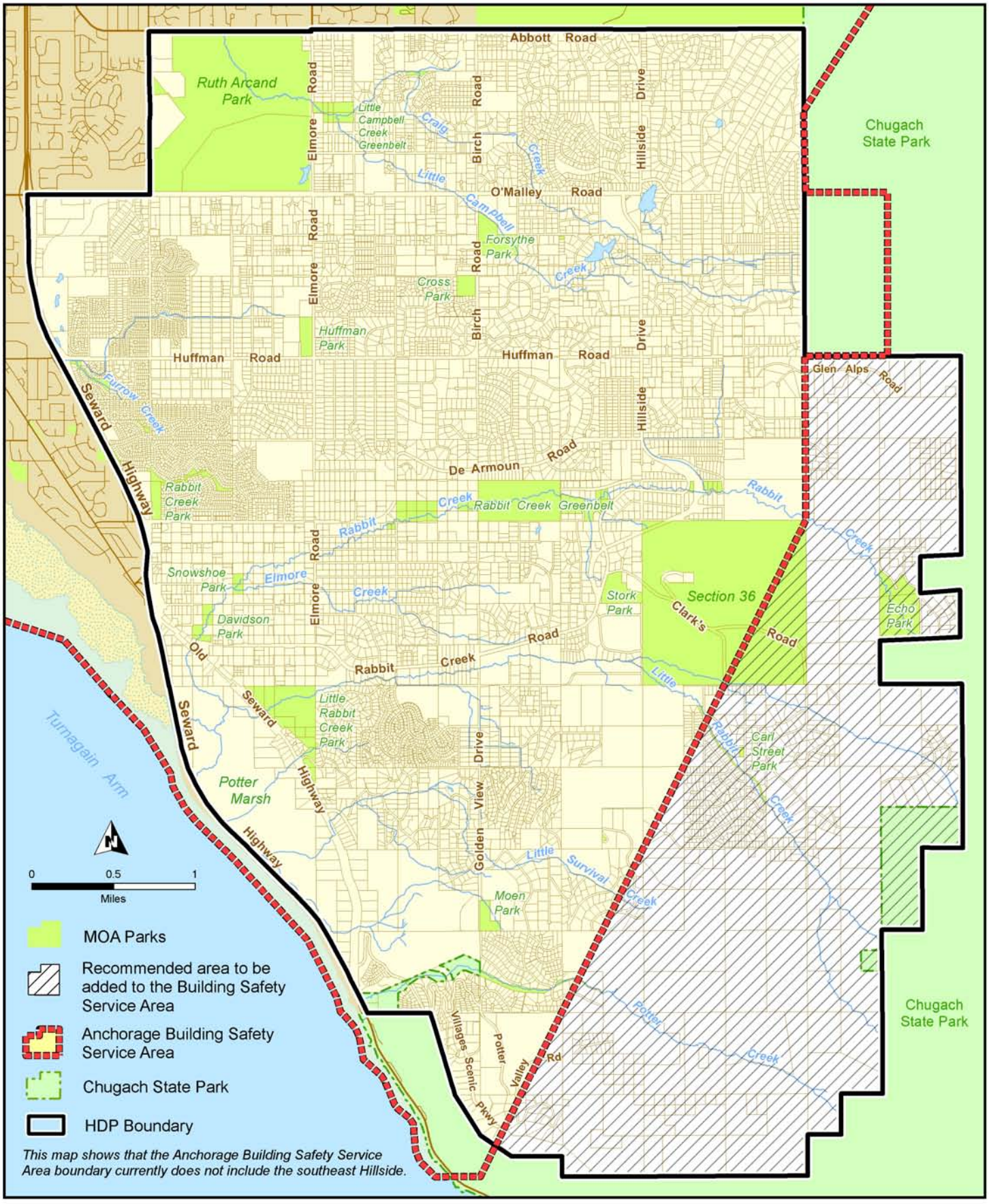
Currently, the southeastern third of the Hillside is outside the Municipality's Building Safety Service Area (BSSA), as shown in Map 6.5. The plan recommends that in the future, construction in this area follow the same building permit process required in the remainder of the Anchorage Bowl. Moving the Building Safety Service Area boundary would require supportive votes by a majority of people in the area proposed to be included in the BSSA, as well as a majority of people in the Anchorage Bowl currently in the BSSA. Costs associated with permitting and inspections are covered by fees directly associated with these activities; thus, the BSSA expansion would not impact property taxes.

Building permits are sensible in this area for the same reason they are required in the rest of the Anchorage Bowl: to protect housing values as well as life and property. Significant growth is expected in the upper Hillside, and requiring building permits can help ensure quality development that benefits both current and new homeowners. As is shown by places that have not met normal site development and building standards, ultimately it is less costly to prevent problems than to try to fix them after the fact. Building permits are particularly appropriate on the upper Hillside, where building conditions are more challenging than in lowland areas of the city, and where drainage and other issues are more significant and more challenging to solve.

Map 6.5

Anchorage Building Safety Service Area

Hillside District Plan



Part 2:

Development Standards and Procedures

Overview

This section presents standards and procedures for drainage, land use, and transportation, to better guide future development to respond to the unique features of the Hillside environment. Standards address development at the scale of individual parcels, subdivisions, and watersheds. Examples include specific rules on the retention of vegetation, the protection of stream corridors, or subdivision submittal requirements.

Like other MOA plans, once adopted, the goals, policies, and objectives of the Hillside District Plan will be implemented by amendments to Title 21.

This plan, by itself, does not formally establish standards with the legal status of the Anchorage Municipal Code (such as Title 21). The word "standards" is used in this plan as a convenient umbrella term for a spectrum of land use intentions, ranging from items that may be added to Title 21, to others that will have a lesser level of legal authority. Additional work will be required to refine the precise language of these standards and to formally bring this material into the Municipality of Anchorage system of laws, regulations, and administrative policies. Options for formalizing these standards include:

- Specific additions to the standards in Title 21, either through the revision process now in progress or once the current revision process is complete.
- Creation of separate overlay district(s) for specific geographic areas of Hillside, to supplement Title 21.
- Additions to the Design Criteria Manual (DCM) or other municipal administrative policy documents, either specifically for the Hillside or more broadly.

Context: Planning Issues Summary
Finding the Right Level of Regulation and the Right Approval Process

Balance Point

The Hillside, particularly the upper elevations, presents a different environment than the rest of the Anchorage Bowl. As a result, a different approach to development is needed than what works in lowland areas. Done right, Hillside development can provide great places to live and also minimize environmental impacts, avoid natural hazards, protect access to recreation, and help

maintain the Hillside's much loved natural and rural character. The primary challenge in providing the right rules is finding the balance point between too little and too much regulation. With too much regulation, projects are not economically viable and creativity is stifled; too little, and project impacts can be unacceptably high.

Understanding Existing Policies

Finding the desired regulatory balance point requires starting from a clear understanding of existing policies. This is not simple because Title 21 and other municipal policies are in transition, and changes are not yet complete. In addition, many people are not aware of recent changes in policy, and the impact of changes already made is not yet visible in new development. Understanding current standards is also difficult because the existing approval process is complex, with authority split among many different local, as well as state and federal agencies.

Flexibility and Rigidity

Standards must balance the benefits of flexibility with the need for rules that are fixed and clear. Flexibility allows development to respond to the character of specific sites; fixed standards promote fairness and consistency between projects and simplify implementation and enforcement. The Hillside District Plan establishes clear objectives as a starting point, then recommends a set of fixed standards to achieve these objectives. In the interest of allowing a reasonable degree of flexibility, when standards are codified, the plan recommends the provision of an administrative process that allows for departure from these standards if (and only if) an alternative approach better meets plan objectives.

Subdivision Submittal Requirements

Quality development in locations like the Hillside requires different site information. Existing submittal requirements only partially fulfill the need for accurate information about site characteristics.

Implementation

Not only are the right standards needed, but a system must be in place to ensure that these development standards are actually enforced in the field.

Goal and Policy Summary: Part 2

GOAL - 14	
Primary Policy	Implementation
14-G. Modify submittal and review requirements for subdivisions on the Hillside. *(Applies to the entire Hillside District)*	Objective established by the Hillside District Plan; codification by MOA Planning and MOA Project Management and Engineering (PM&E).
14-H. Clearing, grading, and other site modifications will not be permitted prior to the approval of a preliminary plat, building permit, or land use permit. *(Applies to the entire Hillside District)*	Objective established by the Hillside District Plan; codification by MOA Development Services Department, MOA Project Management and Engineering Department-Watershed Management Services.
14-I. Establish a new set of development standards for subdivisions in upper elevation or steeper slope areas of the Hillside. *(Applies to upper elevation or steeper slope areas of the Hillside District)*	Objective established by the Hillside District Plan; codification by MOA Planning Department and MOA Project Management and Engineering.
14-J. Establish a new set of development standards for individual lots or parcels in upper elevation or steeper slope areas of the Hillside. *(Applies to upper elevation or steeper slope areas of the Hillside District)*	Objective established by the Hillside District Plan; codification by MOA Planning Department and MOA Project Management and Engineering.
14-K. Acquire, where existing drainage systems are discontinuous, necessary drainage easements required to solve drainage problems, preferably through voluntary sales, or as a last resort, through eminent domain. *(Applies to the entire Hillside District)*	Objective established by the Hillside District Plan; implementation by MOA Development Services, MOA Project Management and Engineering-Watershed Management Services.
14-L. Establish development standards for a Hillside Conservation Subdivision. *(Applies to the entire Hillside District)*	Objective established by the Hillside District Plan; codification by the MOA Planning Department.
14-M. Develop Hillside road standards for challenging site conditions and rural character including bedrock, steep slopes, and sub-alpine and alpine elevations with the purpose of minimizing cut-and-fill, disruption to natural drainage, and visual impacts. *(Applies to the entire Hillside District)*	MOA Traffic Department, MOA Project Management and Engineering.
14-N. Develop standards for the use of gravel roads in limited circumstances: for new or existing roads that are unlikely to have further connections, have design speeds of 25 miles per hour or less, and will have no more than 100 ADT at full build-out. *(Applies to the entire Hillside District)*	MOA Traffic Department, MOA Project Management and Engineering (PM&E)
14-O. Establish standards for lighting. *(Applies to the entire Hillside District)*	Objective established by the Hillside District Plan; codification by the MOA Planning Department.
14-P. Establish standards for ridgetop development. *(Applies to the areas specified on HDP Map 6.9)*	Objective are established by the Hillside District Plan; codification by the MOA Planning Department.

A Look at How They Do It "Outside"

Most U.S. cities that include extensive areas where hillsides are developed have established a set of specific standards to guide this growth. A 1996 report by the American Planning Association (APA), "Planning for Hillside Development" reviews hillside development ordinances from 190 local governments in 22 states. Below is a highly-compressed summary of the history of hillside development ordinances, based on the findings of the APA report:

- Early 1950s - Grading standards, to protect public safety.
- Later 1950s - Hillside-specific street and subdivision standards.
- 1960 - Slope-density ordinances, reducing density with increasing slopes.
- 1970s - Environmental policies; e.g., watershed protection, erosion, and sedimentation.
- 1980s to today - Integrated standards for hillside development, addressing visual quality, fire safety, and environmental protection.

As is demonstrated by this report, Anchorage lags behind most U.S. cities in establishing specific standards to guide hillside development.

Application of Development Standards and Procedures

As is summarized in the table on page 6-23, some of the standards and procedures established in this plan apply to the entire Hillside District, while others are limited to specific portions of the district. The standards associated with HDP Policies 14-I and 14-J apply only in those areas of the Hillside with steeper slopes and at higher elevations.

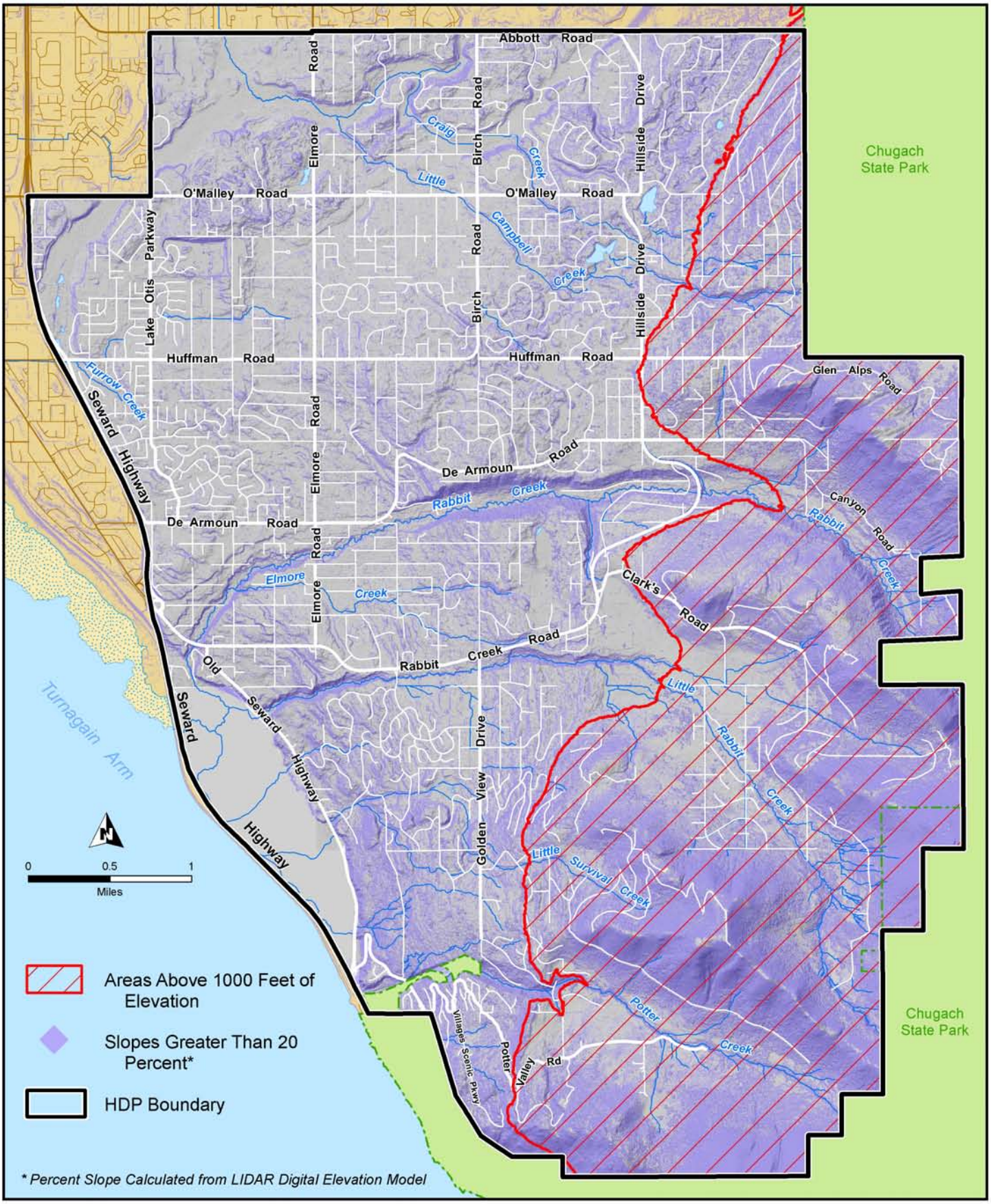
The challenges for development on the Hillside increase with slope and elevation. Steeper average slopes are correlated with an expanding range of development issues, including increased runoff, increased erosion, and more challenging construction conditions. As elevations increase, precipitation rises, soils are thinner, snow stays longer and falls earlier, growing seasons are shorter, and vegetation decreases, all which increase the impacts (and visibility) of development. Consequently, the plan establishes a set of new standards (HDP Policies 14-I and 14-J) that apply in areas where either average slopes on lots exceed 20 percent or in higher elevations areas, defined as areas above the "vegetative transition line."

Map 6.6 identifies the general location of the areas where these standards apply. The "vegetative transition line" on the Hillside separates lower elevation areas where birch and spruce forests dominate, from upper elevation sub-alpine and alpine areas. This boundary generally corresponds with the 1,000-foot contour, and also matches the transition from slope and valley tills, moraines and bedrock in alpine areas, to washed and ridged tills in lowlands (shown on Map 1.4). The precise location of this line will be determined in the field, after the plan is approved, as part of the formalization of HDP Policies 14-I and 14-J. Above this line, vegetation is characterized initially by increasing numbers of alders and declining numbers and sizes of spruce and birch trees, and increasing numbers of hemlock. At higher elevations this transitional vegetation gives way to alpine tundra. In areas below the vegetative transition line and below average slopes of 20 percent (that is, in the rest of the Hillside), the regular Title 21 development standards apply.

Map 6.6

Steep Slopes and Upper Elevations

Hillside District Plan



Objectives for Development Standards

The objectives for Hillside development standards are:

- Minimize disruption of the Hillside natural setting and natural systems, to avoid drainage problems, protect water quality, protect habitat, and maintain rural character.
- Prevent soil erosion and landslides; minimize risks from natural hazards, including wildfire, flooding, earthquakes and avalanche.
- Design and site buildings, driveways, and other site improvements to minimize site disturbance; retain natural contours to the greatest extent possible.
- Retain natural, indigenous vegetation, and (where necessary) revegetate disturbed areas to reduce drainage and erosion problems, provide wildlife habitat, and maintain the area's visual character.
- Incorporate drainage design so development does not adversely impact neighboring or nearby properties, downstream properties, and public infrastructure:
    - Maintain and use, as appropriate, natural drainage systems, including streams, wetlands, recharge areas and other natural water systems.
    - Design subdivisions and other developments to accept upslope natural drainage; convey this runoff through the site via natural waterways and to natural waterways on adjoining down-slope properties.
    - Minimize impervious areas.
    - Protect (and/or establish) and sustain infiltration areas to detain or retain runoff from impervious surfaces.
    - Provide for the conveyance of surface discharges of groundwater and reduce unwanted glaciation.
- Maintain the natural, rural appearance of the Hillside, to provide a high-quality residential and recreational setting.
- Support innovative architectural, landscaping, circulation, and site design to help achieve these objectives.
- Establish development standards that can help reduce development costs, while serving other objectives listed above.
- Establish clear, enforceable penalties for the violation of adopted standards to ensure compliance.

Submittal Requirements

Policy 14-G

Modify submittal and review requirements for subdivisions on the Hillside.

Background

Current subdivision submittal requirements provide only a generalized picture of the natural environment of a site proposed for subdivision. Better information regarding site features at the outset of a project will benefit the developer, the project, reviewing agencies, and the surrounding neighborhoods. While this policy applies throughout the Hillside, it will largely be applicable in the southeastern portion of the district where the large majority of vacant property is located.

The Hillside District Plan expands the submittal and review process to include the following steps:

1. The developer, prior to any site modification, submits an initial environmental conditions map and associated information. This material is detailed for the project site and also shows how these features relate to similar features on surrounding parcels. Required submittal materials are outlined below; the first group is already required; the second group outlines additional requirements.

   Material currently required:

   - Topography (including slope calculations for R-10 development).
   - Trail and road corridors identified in adopted municipal plans.
   - Hazard areas.
   - Streams and other waterways and waterbodies.
   - Aerial photo map, including existing vegetation and major stands of trees, with a description.
   - "As built" survey indicating the location of any existing private improvements.
   - Public improvements, including the location of existing rights-of-way, trails, walkways, sidewalks, and other public infrastructure on the subject property and on adjacent properties.

- Soil conditions for meeting requirements for on-site wastewater treatment and road subgrades.
- Environmental features, including wetlands and landslides.

New submittal requirements:

- Depth to bedrock.
- Groundwater recharge zones.
- Groundwater discharge zones.
- Vegetation/land cover (i.e., interpretation of aerial photograph to distinguish areas with different vegetation).
- Built/green infrastructure features as identified on the Hillside Built/Green Infrastructure Map (e.g., trails and associated trailheads, roads, drainage features) on the subject property and connecting to surrounding properties.
- All dedicated easements (e.g., for trails and utilities on adjacent properties).
- Slopes (by grade category: 20-30 percent, 30-50 percent, more than 50 percent).
- Representative land survey field verification of topography.

2. The environmental conditions map is reviewed and determined complete by the Municipality within a reasonable period of time.
3. The developer submits a preliminary plat in conformance with code requirements, showing parcel boundaries and planned improvements, including roadways, trails, and drainage easements. The preliminary plat package includes information that clarifies how the proposed subdivision responds to environmental conditions and development standards.
   - Drainage plan.
   - Connectivity plan indicating how the project provides for the connectivity of roads, trails, and stream corridors between surrounding parcels.
   - General locations of individual residences, showing how these comply with applicable standards (such as drainage and driveway slope standards).
   - Location of water and wastewater facilities.

Clearing and Grading

Policy 14-H
Clearing, grading, and other site modifications will not be permitted prior to the approval of a preliminary plat, building permit, or land use permit.

Background
The overriding objective for the Hillside is to shape future development to adapt to and retain natural drainage, natural contours, and natural vegetation. Current regulations allow landowners to extensively modify these properties prior to any environmental reviews or project approvals. Under this new standard, no significant grading or clearing can occur on undeveloped tracts until the process outlined in HDP Policy 14-G has been followed; that is, until the required environmental information has been submitted and approved, and a preliminary plat approved. This includes both clearing with hand tools and mechanized means. Likewise, no significant grading or clearing can occur on individual undeveloped parcels until a building permit or land use permit has been issued, and the requirements for protection of natural vegetation and contours are assured. This policy is not intended to prevent minor clearing of vegetation on existing developed parcels. Likewise, vegetation retention requirements must be consistent with wildfire protection standards.

Development Standards

Subdivisions

Policy 14-I
Establish a new set of development standards for subdivisions in upper elevation or steeper slope areas of the Hillside.

Background
Development standards at the scale of subdivisions are outlined below. HDP Policy 14-J outlines standards for individual parcels. These standards build from the goals in Chapter 2. Land Use, Chapter 3. Drainage, and Chapter 4. Transportation, as well as the objectives presented in this chapter. The Municipality will write ordinances or policy updates as necessary following plan adoption to formalize these standards.

Setting Policy in the Hillside District Plan versus Title 21

The policy regarding setbacks is a good example of the challenges that have arisen during the preparation of this document. Both the HDP and the Title 21 process have included extensive, parallel discussions of the appropriate size of watercourse setbacks, and discussions of the appropriate categories of streams meriting different setback sizes. While not all members of the CAC agreed, the consensus among the advisory committee and municipal staff was that the two levels of policies outlined in the draft were appropriate.

- Vegetation: Minimize disruption of natural vegetation; where vegetation must be altered (for example, in road cuts), replant disturbed areas with native vegetation meeting "Firewise" guidelines.
- Grading: No mass grading is permitted other than for roads and utilities.
- Utilities: Place utilities near the front lot line to minimize the additional grading needed to install them in the rear of lots.
- Connectivity: Reserve routes for identified Hillside built/green infrastructure elements (watercourses, roads, and trails) to ensure connectivity across multiple parcels. The alignment of these features can be modified from what is shown on the Hillside Built/Green Infrastructure Map (Map 2.11) as long as a reasonably direct, continuous route is provided.
- Watercourse protection: Natural watercourses are the backbone of the Hillside drainage system. Actions are needed to maximize the protection of this important function, for drainage as well as other environmental goals. Wherever possible and practicable, stream corridors shall be further protected to ensure their natural function and contribution to the Hillside drainage and recharge system. Methods of protection are outlined below, in order of most protected to least.
    - Permanent retention in public ownership: Wherever possible, stream corridors will be protected through the retention of tracts of land held in public ownership in conservation status to improve monitoring and enforcement of setbacks, improve long-term, consistent maintenance of natural conditions, and allow an approval process for site-sensitive access and use of stream corridors.
    - Placement in homeowners association: Stream corridors can also be protected in a separate tract of land held by a subdivision's homeowners association. In addition to the separate tract, the dedication of a protection and maintenance easement (per AMC 21.80.040) should be required.
    - Setbacks: Minimum setbacks for watercourses identified on contemporary Municipality of Anchorage mapping shall be fifty feet horizontally from the ordinary high-water mark on each side of streams, and ten feet horizontally

from the edge of each side of drainageways. Protection and maintenance easements can also be applied in this situation.

- Per the Wetlands Management Plan, the requirement for a 65-foot creek setback comes from the wetlands designation and is still required if the stream runs through a wetland. If it does not run through wetlands, then the 50-foot setback would be applicable.

- Road Crossings
  - Minimize road crossings of waterways by roads, utilities, trails, trails and paths, and other linear facilities.
  - Where such crossings are unavoidable, waterways should cross roads and linear features along their natural courses and as near perpendicular (75 degrees or greater) as possible (illustrated in Figure 6.7).

Figure 6.7
Waterway Crossings

Appropriate Crossing Unacceptable Crossing

- Regional/Watershed Drainage Control Structures: Where regional/watershed drainage control structures have been constructed or are programmed for construction and a management system is in place to ensure that these features will be sustained, development may adhere to runoff allowances specified in adopted watershed drainage plans (as opposed to the generally stricter runoff controls that would otherwise apply). For runoff flows in excess of those provided by drainage plans, or where the regional control facilities identified in watershed drainage plans are not programmed or constructed, provide controls to meet the drainage plan allowances.

- Subdivision Drainage Plan: Develop a project drainage plan that shows that strategies to reduce runoff and mitigation of any drainage issues have been adequately provided in the design of the subdivision. Elements of the subdivision drainage plan should include:
  - Preserve and use natural water and drainage features. Surface drainage shall be conveyed in natural drainage-ways protected by setbacks and easements, and be disconnected from roadside ditches as much as possible.
  - Minimize the area tributary to roadside ditches and provide structures other than roadside ditches to convey stormwater runoff.
  - Reserve wetlands and other areas that help store and infiltrate runoff.
  - Where other options are not adequate, use insulated road crossings and dedicated piped drainage systems.
- Shallow Groundwater:
  - Demonstrate adequate planning to avoid areas of shallow groundwater or potential groundwater discharge zones, including municipal mapping of these areas and consideration of these areas in the platting review processes.
  - Minimize disturbance of and construction in groundwater discharge areas and areas with perched, shallow, or high seasonal groundwater elevations.
  - Establish and require compliance with construction standards for roads, trails, utilities, or other infrastructure that keeps subsurface water underground in areas where shallow groundwater cannot be avoided. Provide for the conveyance of surface discharges of groundwater and prevent unwanted glaciation due to road cuts through and other disturbances of groundwater discharge areas.
  - Establish and require compliance with construction standards for roadway crossings by ditches that convey year-round groundwater discharges (for example, smooth-bore culverts graded to the bed of the up- and downstream channel, appropriate insulation, and culverts constructed to as short a length as possible).
- Plan for access for equipment to construct and maintain on-site wastewater systems.

Individual Parcels

Policy 14-J

Establish a new set of development standards for individual lots or parcels in upper elevation and steeper slope areas of the Hillside.

Background

Standards to apply at the scale of individual parcels are listed below. Like the companion standards for subdivisions, these standards build from the goals in Chapter 2. Land Use, Chapter 3. Drainage, and Chapter 4. Transportation, and fulfill the objectives presented in this chapter. The Municipality will write ordinances or policy updates as necessary following plan adoption to formalize these standards.

- Grading: Minimize grading; use "terrain responsive" building techniques that fit buildings to the land, rather that fitting the land to the building.
- Site Disturbance:[2] Each lot shall have a site disturbance envelope which shall define the limits of all earth disturbance and vegetation clearing. Clearing, grubbing, or grading outside the site disturbance envelope is prohibited except to modify fuels in order to reduce fire risk or to accommodate utility service connections. The size of the site disturbance envelope shall be as follows:
  - Lots less than one acre in area: 10,000 square feet maximum.
  - Lots over one acre but less than two acres: 20,000 square feet maximum.
  - Lots over two acres but less than five acres: 30,000 square feet maximum.
  - Lots five acres or greater: 40,000 square feet maximum.
  - Areas outside the site disturbance envelope shall not be used for stockpiling materials or excess fill, construction vehicle access, storage of vehicles during construction, or similar uses. Temporary construction fencing shall be installed around the perimeter of the site disturbance envelope, to be removed after the final certificate of zoning compliance is issued.
- Natural Vegetation and Fire Protection: While complying with the site disturbance envelope, also protect residences from

2 - Note: The site disturbance standards presented here are taken from the draft Steep Slope Development Standards, in section 21.07 of the Title 21 Rewrite Public Hearing Draft. In the Hillside District, these standards will be applied both in steep slope areas and in upper elevations.

wildfire dangers. Where there are conflicts between these two objectives, ensure (at minimum) that low-growing natural vegetation remains intact, even if trees are removed.

- Establish standards and guidelines to minimize impervious areas, such as the use of permeable materials for low-traffic surfaces (for example, driveways and vehicle storage); consider the use of vegetative cover for parking areas and roofs.
- Establish and require compliance with standards for the capture of roof runoff (for example, by using "rain gardens" or other features that capture and infiltrate runoff using planted, gravel-filled retention areas).
- Establish and require compliance with standards for suitable outfalls for footing drains, including subsurface piped drainage systems and minimum requirements for on-site infiltration or day-lighting of footing drain discharge. If footing drains are proposed but there is no suitable outfall, require alternative foundation design that does not require continuous de-watering (such as slab-on-grade, pilings).

Drainage Easement

Policy 14-K

Acquire, where existing drainage systems are discontinuous, necessary drainage easements required to solve drainage problems, preferably through voluntary sales, or as a last resort, through eminent domain.

Background

Roadside ditches and other drainage conveyance systems require connectivity. However, in some places on the Hillside, the drainage system stops at the subdivision boundary or the end of a constructed road and the downstream conveyance is inadequate. In other places, subdivisions have been developed that block natural routes for the conveyance of water from upslope development. This policy will provide a clear means to acquire the missing links for comprehensive drainage connectivity. Drainage easements should be adequate for site access and span at least 10 feet on both sides of drainageways.

Conservation Subdivisions

Policy 14-L

Establish development standards for a Hillside Conservation Subdivision.

Background

As outlined in Chapter 2. Land Use, Title 21 establishes a conservation subdivision process; the Hillside District Plan establishes an additional variation on this policy, which applies throughout the Hillside District.

Rules for the Hillside Conservation Subdivision build from Title 21 conservation subdivision regulations. Like the Title 21 conservation subdivision, the Hillside Conservation Subdivision allows for flexibility in lot layout and a reduction in individual lot size. This approach encourages clustering residential development to provide greater protection of open space and to provide improved recreation opportunities for residents and the public. The general policy direction for this new development tool is outlined below, but implementation will require follow-up codification.

- Parcel Size: The minimum parcel size for the use of Hillside Conservation Subdivision is 10 acres.
- In order to qualify for a density bonus, the Hillside Conservation Subdivision requires a minimum of 50 percent of the overall land to be set aside as permanent open space.
- Individual Lot Size: The Hillside Conservation Subdivision allows for smaller lots than would be possible under baseline zoning. The minimum lot size may range from 25,000 square feet to 15,000 square feet, provided that homesite areas are adequately buffered. Lots must still meet municipal requirements for water and wastewater, so lots of less than 40,000 square feet will require the use of neighborhood wastewater systems or some other alternative to traditional on-site wells and septic systems.
- The Hillside Conservation Subdivision allows for a modest increase in the number of allowed lots. To be considered for a possible increase in the number of units (bonus units), an initial determination must be made of the number of lots that would be allowed under the baseline zoning, considering site-specific constraints that would reduce the hypothetical maximum number of lots. Exceeding this otherwise applicable maximum will be possible only if the developer demonstrates that the subdivision goes beyond otherwise applicable open space and environmental standards and provides substantive public benefits, as outlined below:

Definition of Terms

As was noted in Chapter 2. Land Use, there is potential for confusion in the use of terms "conservation" and "open space" subdivisions. The details are explained in Chapter 2; the short version is below:

- Conservation Subdivision refers to the general approach of allowing flexibility in subdivision layout.
- Title 21 Conservation Subdivision: Permits reduction in lot sizes but no increases in the number of lots than would otherwise be permitted (outlined in Chapter 8 of Title 21).
- Hillside Conservation Subdivision: Allows a small increase in number of lots than would otherwise be permitted, provided applicable open space standards are exceeded (HDP Policy 2-C).

  - Preserve extra open space (e.g., stream or trail corridors that exceed standard widths or that convey land to public use versus simply relying on development setbacks).
  - Preserve extra natural drainage features (e.g., protection of buffer areas around a wetland or a wider than required stream corridor).
  - Preserve more valuable open space (e.g., open space of particular value for recreation use or extra protection of wetlands or natural vegetation).
  - Provide open space that goes beyond normal standards for the connectivity of built/green infrastructure (e.g., connectivity of stream channels, trails, or wildlife movement).
  - Provide for public recreational use (e.g., dedicating land versus merely using development setbacks, providing space for public trailhead parking).
  - Preservation of significant trees and habitat, wildlife corridors, and distinctive natural features.
  - Preservation of steep hillsides with the objective of locating homesites and roads in ways that mitigate disturbance to the terrain and natural vegetation, and minimize visibility from surrounding neighborhoods and public streets.
  - Open space should be open to the general public where the area is part of or connects to a regional or sub-regional greenbelt. Where the intent is purely for use by the immediate neighborhood, access can be held by the homeowners association; but to qualify for a density bonus, the proposal must provide some demonstrable benefit to the broader community, such as permanent viewshed preservation or public access (for example, a neighborhood trail link).

- Number of Bonus Lots: Provision of bonus lots should be on a "sliding scale" ranging from a 5 to 20 percent density increase above what base zoning and site constraints would allow. The bonus will be proportional to the quality and quantity of open space in the conservation subdivision and the degree to which the design provides broad and permanent public benefits. Standard required dedications and setbacks do not count as the bonus-yielding open space.

- Require an open space buffer and screening landscaping (such as 100 feet deep) along the perimeter of development, especially when abutting a large-lot residential neighborhood. If high elevation or other site conditions preclude vegetative buffers from achieving the vegetative buffer intent, additional setbacks or larger lots will be required and limits to building heights, bulk, and the placement of homes will be made to avoid impact to abutting and adjacent lots.
- Using land form to produce cut-and-fill slopes compatible with existing land character, use of terrain-adaptive architecture.
- Connectivity: Open space shall provide continuity and link to open space area(s) of adjoining subdivisions and public open space, where feasible.
- Identification and Reservation of Open Space: Open space shall be delineated and identified on the plat. Open space, as dedicated in the Hillside Conservation Subdivision, is defined as areas preserved in their natural state, with the exception of trails, trailheads and small scale recreational improvements such as a bench or viewing area. Open space established through this process shall be preserved from development in perpetuity through the use of deed restriction or easement, and shall be conveyed to a homeowners association, the Municipality, or another organization with a stated mission to permanently preserve open space.
- Recreation Uses: Where the primary intent of the open space is for public recreation, particularly for trails, the means to protect open space shall be a public use easement, or dedication of the land to the Municipality or to a third party that will permit public use. This area shall be legally publicly accessible, or attached to an existing open space or greenbelt with public access. If attachment to an existing open space or greenbelt is proposed, it must be in an area feasible for the intended use. Though homeowners associations often own land crossed by public trail easements, public parking areas at trailheads will generally be sited on public land.
- Size and Uses of Open Space
    - The minimum size of any single open space parcel is one acre other than for linear features such as trails. No portion of the land preserved as common open space may be less than 100 feet in its smallest dimension. Exceptions to this 100-foot minimum width may be allowed for linear features (such as stream and trail corridors) that extend over the

Old Seward Highway extends toward Potter Marsh.

length of the property, and which may be as narrow as 30 feet.

- Community wells and community septic systems shall not be allowed within areas identified as conservation open space.

- No portion of the land preserved as common open space may be located within the boundaries of an individual lot for residential development or in a road right-of-way.
- Approval Process: Two conceptual plats will be required: 1) one traditional R-10 subdivision and 2) the proposed conservation subdivision. The conceptual plats determine the base density.

Road and Driveway Standards

Policy 14-M

Develop Hillside road standards for challenging site conditions and rural character, including bedrock, steep slopes, and sub-alpine and alpine elevations with the purpose of minimizing cut-and-fill, disruption to natural drainage, and visual impacts.

Gravel Road Standards

Policy 14-N

Develop standards for the use of gravel roads in limited circumstances: for new or existing roads that are unlikely to have further connections, have design speeds of 25 miles per hour or less, and will have no more than 100 ADT at full build-out.

Background for Policies 14-M and 14-N

The impact of roads and driveways can be significant in hillside areas. Extra effort is required to avoid creating serious impacts on drainage, visual quality, and water quality. Variations in the standards for road dimensions and surfacing have a major impact on road costs, and the design of roads has a major impact on road maintenance costs.

Over the course of the development of this plan, a new set of Anchorage-wide standards were developed, which were judged to meet the needs of the Hillside. These standards, summarized in the remainder of this section, allow for a road system that reflects Hillside character. Paving is required on public roads, but strip-paving (no curbs and sidewalks) and narrower rights-of-way are allowed in specific situations. This approach is intended

Table 6.8
Summary of General Standards for New Roads

Setting (related to Land Use Map)	Average Daily Traffic (ADT) greater than 2,000	ADT 2,000 to 500	ADT 500 to 100	ADT less than 100
Areas three dwelling units per acre (DUA) or greater: • Residential • Commercial • Park and Natural Resources • Community Facility in areas generally	• Surface paved (with curbs and gutter) • Min Surface Width: 24' • Max Slope: 8%	• Surface paved (with curbs and gutter) • Min Surface Width: 24' • Max Slope: 8%	• Surface: strip-paved • Surface width: 20' • Max slope: 10% *(Option for 12% with variance*)*	• Surface: strip-paved • Surface width: 20' • Max slope: 10% *(Option for 12% with variance*)*
Areas less than three dwelling units per acre (DUA): • Residential • Park and Natural Resources • Community Facility	• Surface paved (with curbs and gutter) • Min Surface Width: 24' • Max Slope: 8%	• Surface: strip-paved • Surface width: 24' • Max slope: 10%	• Surface: strip-paved • Surface width: 20' • Max slope: 10% *(Option for 12% with variance*)*	• Surface: gravel or strip-paved • Surface width: 20' • Max slope: 10% *(Option for 12% with variance*)*

**The variance is a solution of last resort; it is not to be used as a standard practice or considered the minimum acceptable design to work from.*

Sidewalks, walkways, and trails shall be provided in accordance with the Areawide Trails Plan and any adopted neighborhood or district plan.

to recognize the need for adequate emergency access, the desire to retain rural character, and the tradeoff between construction costs and maintenance costs.

Road standards vary based on context. The Anchorage-wide standards define three areas where different road standards are appropriate:

- Lower Hillside (areas within the Anchorage Roads and Drainage Service area): Urban Design Criteria Manual road standards apply.
- Central Hillside: Rural Design Criteria Manual standards apply, with the possible exception of major east-west streets.
- Southeastern Hillside: Rural Design Criteria Manual standards apply.

Road Development Standards
(Summary of existing Anchorage-wide policies)

- Hillside road standards address corridor width, grades, reducing impacts to viewshed, lighting, and minimizing disturbance to natural drainage.
- Table 6.8 presents Anchorage-wide standards that will apply on the Hillside. The standards allow for narrower rights-of-way in low-traffic-volume roads in rural settings. Rural streets are strip-paved (paved streets without curb-gutter or sidewalks), with shoulders to accommodate pedestrians, drainage ditches, and limited lighting. Urban streets typically have curb-gutter, lights, storm drains and sidewalks.
- These are minimum standards; if an individual, developer, homeowners association, LRSA, etc. prefers higher standards, this plan does not preclude such a decision. Detailed road design standards can be found in the Design Criteria Manual and the Subdivision Standards of Title 21.
- Existing primary or secondary Hillside streets that are not currently paved should be priorities for paving, with the final decision on timing to be determined by working with local residents and the proposed Hillside-wide funding and management entity board. Other streets that are not currently paved may be gradually improved over time, to reduce dust and maintenance costs. This will occur slowly, based on available funding, and considering neighborhood character and preferences.
- Develop construction standards for roads and other infrastructure in areas where shallow groundwater cannot be avoided to minimize subsurface water discharge. Establish construction standards for culverts and pipes conveying continuous groundwater flows across roadways.

Driveway Development Standards
(summary of existing Anchorage-wide policies)

- Minimize driveway length in steeply sloping areas to reduce visual and drainage impacts.
- Provide flexibility in the platting process to allow driveways on both sides of the road when doing so reduces the overall cut-and-fill, but continues to minimize off-site drainage impacts between lots.
- Allow for minimal building setbacks to reduce requirements for driveway-related cut-and-fill.

Cut-and-Fill Development Standards

(Summary of existing Anchorage-wide policies)

Developing roads and trails on the Hillside presents unique challenges. To provide connectivity and at the same time minimize environmental and visual impacts requires both high standards and the option for flexibility. The general objective for all roads and trails is to minimize the extent of roads and the extent of cut-and-fill, particularly in steeply sloping areas. Municipal standards currently set the upper limits on allowed road grades. In some situations, allowing steeper roads for short stretches, subject to an evaluation of the specifics of individual sites, may lead to reduced overall impacts while still providing a safe, acceptable road system.

Existing municipal policies allow a variance procedure for those situations where flexibility on municipal road standards may allow a net reduction in impacts, including avoidance of wetlands, reduced cut-and-fill, reduced drainage impacts, and/or preservation of land for some purpose. In such cases, alternative means and methods (such as retaining walls) could be applied subject to the Municipal Engineer, Traffic Engineer and Fire Marshal's approval.

Lighting Standards

Policy 14-0

Establish standards for lighting.

Background

The concept of limited lighting for this plan is intended to reflect similar light standards proposed in the new Title 21 Lighting Zone for low ambient light levels. The Hillside District Plan promotes this lighting standard to help preserve the "dark sky" character that many Hillside residents wish to preserve in residential areas. The low ambient light would apply to most rural areas, low-density rural residential and natural open space. Specific standards include:

- All residential lighting must be downward directed, avoiding creating glare on surrounding properties.
- Street lighting, particularly at intersections, will be necessary for safety reasons.

Ridgetop Development

Policy 14-P

Establish standards for ridgetop development.

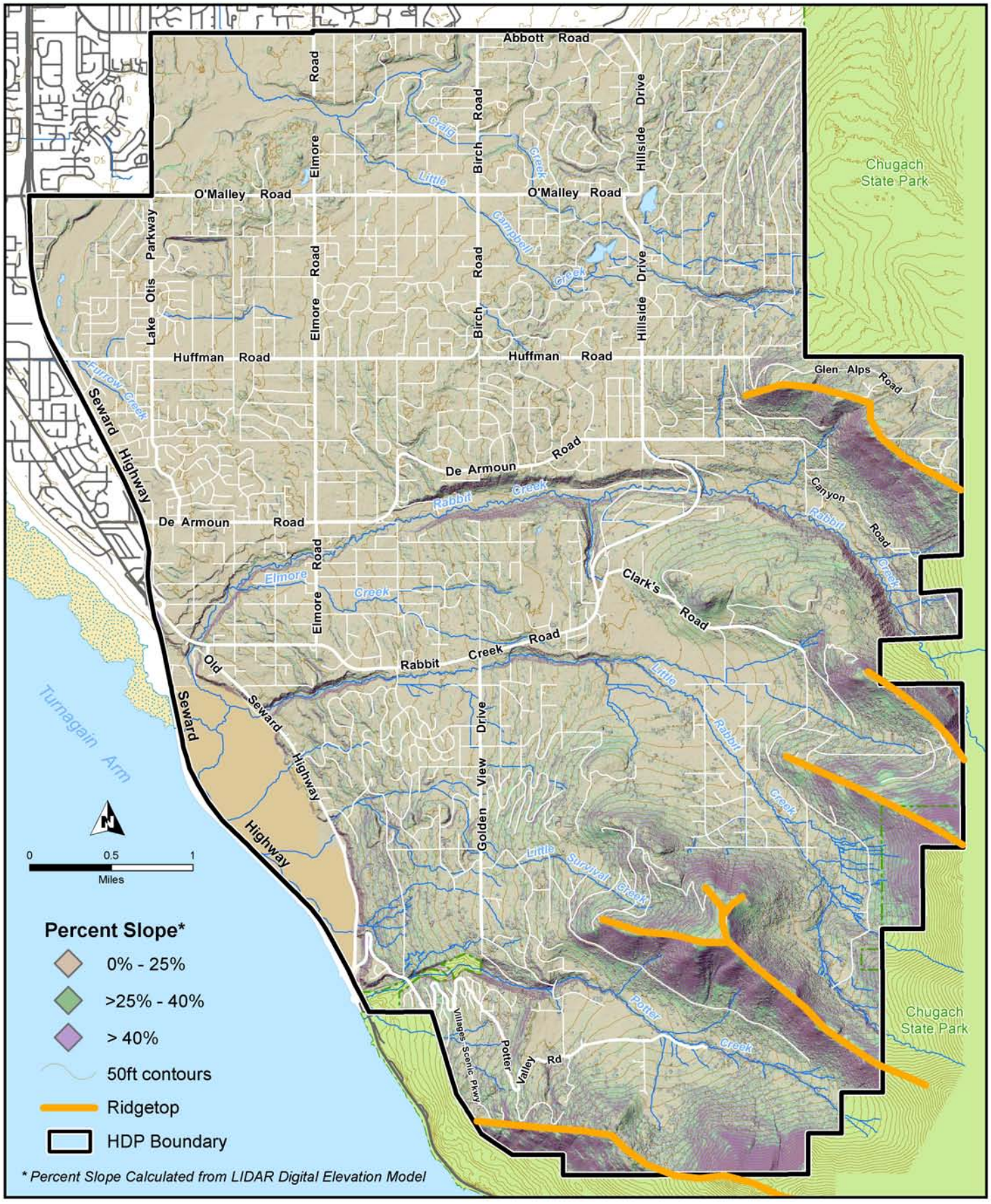
Background

Relative to development in other locations, ridgetop residential and other forms of land development are highly visible, often reducing the quality of views for other residential areas and recreational users over a wide area. Anchorage currently has no existing policies and procedures specific to ridgetop development.

The Hillside District Plan therefore recommends minimizing the visual impacts of ridgetop development with a set of standards for residential development that would apply to specific ridges (Map 6.9) that are particularly prominent from many different locations and separating major watersheds.

Recommended Standards for Ridgetop Residential Development:

- Building heights: shall not exceed 25 feet or two stories above ground.
- Building placement: locations straddling ridgelines should generally be avoided. Placing the building on one side of a ridge greatly reduces visual impacts and also reduces the problems with wind that have plagued previous ridgetop homes on the Hillside.
- Building materials and colors: use of a natural wood exterior is strongly encouraged; if the home is painted, neutral, non-obtrusive colors should be used (e.g., muted browns and greens).
- Roofs and walls: non-reflective materials should be used on roofs and walls.
- Roof lines and vegetation: should be used to help soften the profile of the structure so that the building blends into the horizon line.


Abbott Road
Road
Elmore
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Creek
Little
Birch
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Hillside
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Chugach
State Park
O'Malley Road
O'Malley Road
Parkway
Otis
Lake
Road
Elmore
Campbell
Creek
Road
Birch
Drive
Hillside
Huffman Road
Huffman Road
Glen Alps Road
Furrow Creek
Seward Highway
De Armoun Road
Rabbit Creek
Canyon Rabbit Creek Road
De Armoun Road
Elmore Road
Elmore Creek
Clark's Road
Rabbit Creek Road
Old Seward Highway
Seward Highway
Turnagain Arm
Golden View Drive
Little Rabbit Creek
Little Survival Creek
Potter Creek
Villages Scenic Pkwy
Potter Valley Rd
Chugach
State Park
N
0
0.5
1
Miles
Percent Slope*
0% - 25%
>25% - 40%
> 40%
50ft contours
Ridgetop
HDP Boundary
* Percent Slope Calculated from LIDAR Digital Elevation Model

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